

## CURRICULAR VITA

Giedrius Kanaporis, Ph.D.      **Address:**      1750 W. Harrison St.  
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### **EDUCATION (include years attended and degrees granted)**

Ph.D. in Biophysics      2000 – 2004  
Institute of Cardiology, Kaunas University of Medicine, Kaunas,  
Lithuania  
Master of Science in Molecular Biology and Biotechnology      1998 - 2000  
Vytautas Magnus University, Kaunas, Lithuania  
Bachelor of Science in Biology      1994 – 1998  
Vytautas Magnus University, Kaunas, Lithuania

### **ACADEMIC APPOINTMENTS**

**(starting from the current appointments, include title/rank, years held, name and location of Institution)**

Assistant Professor      2012 - present  
Dept. Molecular Biophysics & Physiology, Rush University, University  
of Health Sciences, Chicago, IL, USA  
Senior Research Associate      2011 - 2012  
Laboratory of Membrane Biophysics; Institute of Cardiology; Lithuanian  
University of Health Sciences, Kaunas, Lithuania  
Postdoctoral Research Associate  
Laboratory of Membrane Biophysics; Institute of Cardiology; Lithuanian  
University of Health Sciences, Kaunas, Lithuania      2009 – 2011  
Postdoctoral Research Associate  
Department of Physiology and Biophysics, Stony Brook University,  
Stony Brook, USA.      2005 – 2009  
Research Associate      2004 – 2005  
Laboratory of Membrane Biophysics; Institute of Cardiology; Lithuanian  
University of Health Sciences, Kaunas, Lithuania  
Junior Research Associate      2000 – 2004  
Laboratory of Membrane Biophysics; Institute of Cardiology; Lithuanian  
University of Health Sciences, Kaunas, Lithuania

**EMPLOYMENT (include non-academic appointments/jobs relevant to current carrier; same information as above)**

Undergraduate and Master student program/internship  
*Laboratory of Membrane Biophysics; Institute of Cardiology; Lithuanian University of Health Sciences, Kaunas, Lithuania* 1997 - 2000

**HONORS AND AWARDS**

Postdoctoral Research Fellowship from Lithuanian National Science Foundation 2010-2011

**SOCIETY MEMBERSHIPS**

American Heart Association 2014-present  
Biophysical Society 2005-present  
Biophysical Society of Lithuania 1999-2012

**SCIENTIFIC AND SCHOLARLY ACTIVITIES (in reverse chronology starting with the most recent one; can be divided by international, national, regional, institutional, etc)**

**□ Poster presentations**

1. **Kanaporis G**, DeSantiago J, Kalik ZM, Banach K, Blatter LA. Action potential shortening prevents atrial calcium alternans Rush University Forum for Research and Clinical Investigation, March 21-22; 2018.
2. **Kanaporis G**, DeSantiago J, Kalik ZM, Banach K, Blatter LA. Action potential shortening prevents atrial calcium alternans. 62<sup>nd</sup> Biophysical Society Annual Meeting; San Francisco, CA, February 17-21, 2018
3. **Kanaporis G**, Blatter LA. The role of action potential dynamics for the development of alternans in atria. Gordon Research Conference: Muscle: Excitation-Contraction Coupling, Les Diablerets, Switzerland, June 5-9 2017
4. **Kanaporis G**, Blatter LA. The role of calcium and action potential dynamics for the development of atrial alternans. Gordon Research Conference: Cardiac Regulatory Mechanisms; New London, NH June 5-10, 2016.
5. **Kanaporis G**, Blatter LA. Propensity and severity of cardiac alternans is enhanced in heart failure. Rush University Forum for Research and Clinical Investigation, March 2-3; 2016.
6. **Kanaporis G**, Blatter LA. Propensity and Severity of Cardiac Alternans is Enhanced in Heart Failure. 60<sup>th</sup> Biophysical Society Annual Meeting; Los Angeles, CA, February 27-March 2, 2016
7. **Kanaporis G**, Blatter LA. Development of Ca Alternans in Atrial Myocytes is Modulated by Action Potential Morphology. 59<sup>th</sup> Biophysical Society Annual Meeting, Baltimore MD, February 7-11, 2015
8. **Kanaporis G**, Blatter LA. Development of Ca Alternans in Atrial Myocytes is Modulated by Action Potential Morphology. Rush University Forum for Research and Clinical Investigation, April 29-30; 2015.

9. **Kanaporis G**, Blatter LA. Contribution of Ca-Regulated Ion Currents to the Action Potential Morphology During Cardiac Alternans. 58<sup>th</sup> Biophysical Society Annual Meeting, San Francisco, CA, February 15-19, 2014
10. **Kanaporis G**, Blatter LA. Contribution of Ca-Regulated Ion Currents to the Action Potential Morphology During Cardiac Alternans. Rush University Forum for Research and Clinical Investigation, 2014.
11. **Kanaporis G**, Blatter LA. Interplay between Calcium Release and Action Potential Alternans in Rabbit Heart. Leducq foundation meeting, Torino Italy, September 5-9 2013
12. **Kanaporis G**, Blatter LA. Interplay between Calcium Release and Action Potential Alternans in Rabbit Heart. 57<sup>th</sup> Biophysical Society Annual Meeting Philadelphia PA, February 2-6, 2013
13. **Kanaporis G**, Navalinskas A, Matiukas A, Mitrea BG., Vosyliūtė R, Jurevičius J, Pertsov AM. Photon Diffusion Attenuation Length in Tyrode and Blood-Perfused Myocardial Tissue. Biophysical Society 55th Annual Meeting; Baltimore PA, March 5-9, 2011.
14. **Kanaporis G**, Jurevicius J, Martisiene I, Vosyliute R, Navalinskas A, Treinys R, Matiukas A, Pertsov AM. Photo-toxicity of near-infrared voltage sensitive fluorescent dyes. 8th EBSA European Biophysics Congress, Budapest, Hungary. August 23rd–27th 2011
15. **Kanaporis G**, Valiuniene L, Brink PR, Valiunas V. Gap Junction Permeability: transfer of negative and positive charged probes. Biophysical Society Annual Meeting, Boston, Massachusetts, March 3-7, 2009
16. Valiunas V, **Kanaporis G**, Valiuniene L, Brink PR. Cardiac gap junctions exhibit connexin-dependent permeability to cyclic nucleotides. Pathological and Physiological Regulation of Cardiac Hypertrophy. Keystone Symposia, Copper Mountain, Colorado, January 13-18, 2008.
17. **Kanaporis G**, Valiuniene L, Mese G, White TW, Brink PR, and Valiunas V. Cell-cell transfer of cyclic nucleotides: quantification and comparison of connexin dependent permeability. International Gap Junction Conference, Helsingor, Denmark, August 4-9, 2007.
18. **Kanaporis G**, Gordon C, Brink PR., Valiunas V. PKC activity affects Cx43 gap junction permeability. Biophysical Society Annual Meeting, Baltimore, Maryland, March 3-7, 2007.
19. Valiunas V, **Kanaporis G**, Valiuniene L, Gordon C, Zuckerman J, Robinson RB, Rosen MR, Cohen IS, Brink PR. Cell-cell coupling between stem cells and adult cardiac myocytes: from intercellular flow of pacemaker current to action potential generation. International Gap Junction Conference, Helsingor, Denmark, August 4-9, 2007.
20. Valiunas V, Valiuniene L, **Kanaporis G**, Cohen IS, Mathias RT, Brink PR. Connexin-specific permeability of gap junction channels for cyclic nucleotides. Biophysical Society Annual Meeting, Salt Lake City, Utah, February 18-23, 2006.

**Funding History of Peer-Reviewed Grants (Federal, Professional Foundations) including type of the grant, role on the project, name of the agency, dollar amount, duration**

**Current research projects**

**AHA Grant in Aid 16GRNT30130011 (PI G. Kanaporis)**  
Alternans in Atria: The Role of Action Potential Morphology.  
Role: Principal Investigator;

07/2016-06/2018

Duration 07/2016-06/2018; Funding: 154.000\$

### Completed research projects

#### **Rush Translational Sciences Consortium Schweppe Foundation and Armour bequest award for Young Investigators, (PI G. Kanaporis)**

Mechanisms of Atrial Alternans in Normal and Failing Heart.

Role: Principal Investigator

Duration: 08/2015-10/2016; Funding: 50.000\$

### BIBLIOGRAPHY (numbered in reverse chronology starting with the most recent one)

#### Original full-length manuscripts (published, in press, or submitted)

1. **Kanaporis G**, Blatter LA. Alternans in atria: Mechanisms and clinical relevance. *Medicina* (Kaunas). 2017 Jun 7. doi: 10.1016/j.medic.2017.04.004. [Epub ahead of print] Review. PubMed PMID: 28666575.
2. **Kanaporis G**, Blatter LA. AP and Ca(2+) alternans: An inseparable couple. *Channels* (Austin). 2017 May 12:1-2. doi: 10.1080/19336950.2017.1330094. [Epub ahead of print] PubMed PMID: 28498780.
3. **Kanaporis G**, Blatter LA. Membrane potential determines calcium alternans through modulation of SR Ca(2+) load and L-type Ca(2+) current. *J Mol Cell Cardiol*. 2017 Apr;105:49-58.
4. **Kanaporis G**, Blatter LA. Ca(2+)-activated chloride channel activity during Ca(2+) alternans in ventricular myocytes. *Channels* (Austin). 2016 Nov;10(6):507-17.
5. **Kanaporis G**, Blatter LA. Calcium-activated chloride current determines action potential morphology during calcium alternans in atrial myocytes. *J Physiol*. 2016 Feb 1;594(3):699-714.
6. **Kanaporis G**, Blatter LA. The mechanisms of calcium cycling and action potential dynamics in cardiac alternans. *Circ Res*. 2015 Feb 27;116(5):846-56.
7. **Kanaporis G**, Martišienė I, Jurevičius J, Vosyliūtė R, Navalinskas A, Treinys R, Matiukas A, Pertsov AM. Optical mapping at increased illumination intensities. *J Biomed Opt*. 2012 Sep;17(9):96007-1
8. Magome N, **Kanaporis G**, Moisan N, Tanaka K, Agladze K. Photo-control of excitation waves in cardiomyocyte tissue culture. *Tissue Eng Part A*. 2011 Aug 11.
9. **Kanaporis G**, Brink PR, Valiunas V. Gap junction permeability: selectivity for anionic and cationic probes. *Am J Physiol Cell Physiol*. 2011 300(3):C600-9.
10. Valiunas V, **Kanaporis G**, Valiuniene L, Gordon C, Wang HZ, Li L, Robinson RB, Rosen MR, Cohen IS, Brink PR. Coupling an HCN2-expressing cell to a myocyte creates a two-cell pacing unit. *J Physiol*. 2009; 587(Pt 21):5211-26.
11. **Kanaporis G**, Mese G, Valiuniene L, White TW, Brink PR, Valiunas V. Gap junction channels exhibit connexin-specific permeability to cyclic nucleotides. *J Gen Physiol*. 2008, 131(4):293-305
12. Thomas BC, Minogue PJ, Valiunas V, **Kanaporis G**, Brink PR, Berthoud VM, Beyer EC. Cataracts are caused by alterations of a critical N-terminal positive charge in connexin50. *Invest Ophthalmol Vis Sci*. 2008 49(6):2549-56.

13. Yum SW, Zhang J, Valiunas V, **Kanaporis G**, Brink PR, White TW, Scherer SS. Human connexin26 and connexin30 form functional heteromeric and heterotypic channels. *Am J Physiol Cell Physiol*. 2007 293(3):C1032-48.
14. Zablockaitė D, Gendviliene V, Macianskiene R, Skeberdis VA, Jurevicius J, **Kanaporis G**, Gurskaite H, Benetis R. Effect of hyperosmolarity on beta2-adrenergic stimulation in human atrium. *Medicina (Kaunas)*. 2005;41(5):401-8.
15. Zablockaitė D, Gendviliene V, Macianskiene R, Skeberdis VA, Jurevicius J, **Kanaporis G**, Benetis R. Changes of beta2-adrenergic stimulation induced by hyperosmosis in human atrium. *Rocz Akad Med Bialymst*. 2005; 50:244-6.

#### ❑ Other Abstracts

1. **Kanaporis G**, DeSantiago J, Kalik ZM, Banach K, Blatter LA. Action potential shortening prevents atrial calcium alternans. *Biophys J* 2018; 114(3) pp. 290a
2. **Kanaporis G**, Blatter LA. Propensity and Severity of Cardiac Alternans is Enhanced in Heart Failure. *Biophys J* 2016; 110(3) pp. 287a
3. **Kanaporis G**, Blatter LA. Development of Ca Alternans in Atrial Myocytes is Modulated by Action Potential Morphology. *Biophys J* 2015; 108(2) pp. 263a
4. **Kanaporis G**, Blatter LA. Contribution of Ca-Regulated Ion Currents to the Action Potential Morphology During Cardiac Alternans. *Biophys J* 2014; 106(2) pp. 112a.
5. **Kanaporis G**, Blatter LA. Interplay between Calcium Release and Action Potential Alternans in Rabbit Heart. *Biophys J* 2013; 104(2) pp. 435a.
6. **Kanaporis G**, Navalinskas A, Matiukas A, Mitrea BG., Vosyliūtė R, Jurevičius J, Pertsov AM. Photon Diffusion Attenuation Length in Tyrode and Blood-Perfused Myocardial Tissue. Biophysical Society 55th Annual Meeting March 5-9, 2011; Baltimore, USA. *Biophys J* : 100 (3; suppl. 1): 318a.
7. **Kanaporis G**, Jurevicius J, Martisiene I, Vosyliute R, Navalinskas A, Treinys R, Matiukas A, Pertsov AM. Photo-toxicity of near-infrared voltage sensitive fluorescent dyes. 8th EBSA European Biophysics Congress; August 23rd–27th 2011, Budapest, Hungary. *Eur Biophys J*: 2011, 40 (suppl. 1): S126-S127.
8. Valiunas V, **Kanaporis G**, Valiuniene L, White TW, Brink PR. Membrane hemichannels are permeable to cyclic nucleotides. Molecular Basis for Biological. Membrane Organization and Dynamics. Keystone Symposia, Snowbird, Utah, January 10-15, 2010. Abstract Book, p.92.
9. **Kanaporis G**, Valiuniene L, Brink PR, Valiunas V. Gap Junction Permeability: transfer of negative and positive charged probes. Biophysical Society Annual Meeting, Boston, Massachusetts, March 3-7, 2009
10. Valiunas V, **Kanaporis G**, Valiuniene L, Brink PR. Cardiac gap junctions exhibit connexin-dependent permeability to cyclic nucleotides. Pathological and Physiological Regulation of Cardiac Hypertrophy. Keystone Symposia, Copper Mountain, Colorado, January 13-18, 2008. Abstract Book, p.71
11. **Kanaporis G**, Valiuniene L, Mese G, White TW, Brink PR, and Valiunas V. Cell-cell transfer of cyclic nucleotides: quantification and comparison of connexin dependent permeability. International Gap Junction Conference, Helsingor, Denmark, August 4-9, 2007.
12. **Kanaporis G**, Gordon C, Brink PR., Valiunas V. PKC activity affects Cx43 gap junction permeability. Biophysical Society Annual Meeting, Baltimore, Maryland, March 3-7, 2007. *Biophys J Supplement*, 2007

13. Valiunas V, **Kanaporis G**, Valiuniene L, Gordon C, Zuckerman J, Robinson RB, Rosen MR, Cohen IS, Brink PR. Cell-cell coupling between stem cells and adult cardiac myocytes: from intercellular flow of pacemaker current to action potential generation. International Gap Junction Conference, Helsingor, Denmark, August 4-9, 2007.
14. Valiunas V, **Kanaporis G**, Gordon C, Valiuniene L, Zuckerman J, Robinson RB, Rosen MR, Cohen IS, Brink PR. Coupling between stem cells and cardiac myocytes: from intercellular flow of pacemaker current to action potential generation. Molecular Pathways in Cardiac Development and Disease; Integrative Basis of Cardiovascular Disease. Keystone Symposia Abstract Book, 2007, p.137.
15. Valiunas V, Valiuniene L, **Kanaporis G**, Cohen IS, Mathias RT, Brink PR. Connexin-specific permeability of gap junction channels for cyclic nucleotides.. *Biophys J* Volume 90, January, 2006.