

IGOR IZRAILTYAN, M.D.

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EMPLOYMENT (ACADEMIC APPOINTMENTS)

- 08/2005 - present *Assistant Professor*
Department of Anesthesiology
SUNY at Stony Brook, Stony Brook, NY
Cardiac Anesthesia Division, Research and Educational Committees
- 05/1995 - 04/2000 *Research Assistant Professor*
Department of Cardiovascular Medicine and Surgery,
Drexel University (MCP Hahnemann), Philadelphia, PA
PI in trial “Risk Stratification of Myocardial Rejection Using Nonlinear Measures of Heart Rate Variability in Transplant Patients”. *Coordinator* in the Multicenter Clinical Trial “Comparison of Neutralase (IBEX Technologies) to Protamine in Subjects Undergoing Coronary Artery Bypass Graft Surgery”. *Co-I* in clinical project “Diagnostic Utility of Echocardiographic and Nuclear Imaging in Predicting Cardiac Events and Death in Patients”. *PI* in projects: “Intrinsic Neuroendocrine Regulation in Ischemic Heart”, and “Extracellular and Intracellular Signaling in Cardiac Stress Adaptation to Ischemia”.
- 07/1992 - 05/1995 *Research Associate*
Department of Cardiovascular Medicine and Surgery,
Drexel University (MCP Hahnemann), Philadelphia, PA
Studied microvascular-interstitial interactions in regulating coronary blood flow and cardiac mechanics and energetics. Attended and made presentations on clinical conferences/rounds and national meetings.
- 07/1985 – 12/1992 *Research Fellow, Teaching Instructor*
Department of Physiology
Russian State Medical University, Moscow, Russia
Participated in clinical trials: “Therapeutic Use of Laser Technology in Coronary Artery Disease”, “Optimization of Quantitative Assessment of Cardiac Contractile Function during the Catheterization”, “Differential Modulation of Autonomic Control”. Taught Physiology to medical students.

EDUCATION

- 07/2004 – 06/2005 *Fellowship, Cardiothoracic Anesthesiology and Critical Care*
Duke University, Durham, NC
Program Director: Dr. Mark Stafford Smith
- 07/2001 - 06/2004 *Residency, Anesthesiology*
SUNY at Stony Brook, Stony Brook, NY
Program Director: Dr. Peter Glass

- 06/2000 - 06/2001 *Residency, Transitional Year*
Mercy Catholic Medical Center, Darby, PA
 Program Director: Dr. J. Harris Joseph
- 07/1985 - 12/1991 *Degree: Ph.D. in Physiology (Candidate)*
Russian State Medical University, Moscow, Russia
 Thesis: "Neural Modulation of the Contractility in Different Cardiac Chambers during Myocardial Ischemia" (*Completed all requirements for Ph.D. degree; unable to defend thesis due to departure from Soviet Union*)
- 09/1979 - 07/1985 *Degree: M.D., Summa Cum Laude*
Russian State Medical University, Moscow, Russia

AWARDS

- 2005 Society of Cardiovascular Anesthesiologists 2005 Annual National Meeting
 Research Study Award - Abstract with Potential Impact on our Specialty
- 2004 Resident of the Year, Department of Anesthesiology, SUNY at Stony Brook
- 2003 Departmental Resident Award for Excellency in Anesthesia Training, SUNY
- 1998 Associate Fellowship in American College of Cardiology
- 1998 Named in top 10% reviewers by Annals of Internal Medicine
- 1994-95 Beginning Research GRANT-IN-AID, American Heart Association,
Principal Investigator: AHA PA 1942005
- 1989 Best Research Prize of the Russian State Medical University

MEMBERSHIP IN PROFESSIONAL SOCIETIES (PROFESSIONAL SOCIETY AFFILIATIONS)

- 2004 American Medical Association
- 2001 American Society of Anesthesiologists
- 2001 The New York State Society of Anesthesiologists
- 1998 American College of Cardiology
- 1998 Cardiovascular System Dynamics Society
- 1998 New York Academy of Sciences
- 1997 American Heart Association
- 1995 American Physiological Society
- 1995 International Society for Heart Research

LICENSURE AND CERTIFICATION

- Medical License: State of New York (#236026)
- Board Certification: American Board of Anesthesiology
- Board Certification: National Board of Echocardiography

TEACHING ASSIGNMENTS

Lectures (list of all the lectures on TEE and Key Words to be attached – about 20 lectures)

KEY SERVICE AREAS

Administrative Service: perioperative TEE service

LIST OF PUBLICATIONS

Papers in peer reviewed journals

1. **Izrailtyan, I.**, Clark, J., Swaminathan, M., Podgoreanu, M.V., Mackensen, B., Mathew, J.P. "Case report: optimizing intraoperative detection of pulmonary embolism using contrast-enhanced echocardiography." *Can J Anesth* 2006 Jul;53(7):711-5
2. Du, C., Koretsky, A., **Izrailtyan, I.**, Benveniste, H.D. "Simultaneous detection of blood volume, oxygenation and intracellular calcium changes during cerebral ischemia and reperfusion in vivo using photospectrometry." *J Cereb Blood Flow Metab.* 2005 Mar 2; Vol. 25, pp. 1078-1092
3. Chamchad, D., Arkoosh, V., Horrow, J.C., Buxbaum, J., **Izrailtyan, I.**, Nakhamchik, L., Hoyer, D., Kresh, J.Y. "Using heart rate variability to stratify risk of obstetric patients undergoing spinal anesthesia." *Anesth Analg.* 2004 Dec;99(6):1818-21
4. Chaudhry, F.A., Upadya, S.P., Singh, V.P., Cusik D.A., **Izrailtyan, I.**, Sanders J., Hargrove, C. "Identifying patients with degenerative mitral regurgitation for mitral valve repair and replacement: a transesophageal echocardiographic study." *J Am Soc Echocardiogr.* 2004 Sep;17(9):988-94.
5. Alipov, N.N., **Izrail'tyan, I.M.**, Sokolov, A.V., Trubetskaya, L.V., Kuznetsova, T.E. "Comparison of different cardiac relaxation indices." *Bull Exp Biol Med.* 2001 May;131(5):416-20.
6. **Izrailtyan, I.**, Kresh, J.Y., Morris, R.J., Brozena, S.C., Kutalek, S.P., Wechsler, A.S. "Early Detection of Acute Allograft Rejection by Linear and Nonlinear Analysis of Heart Rate Variability." *J. Thor. Card. Surg.* Vol. 120, No. 4 (Oct), pp. 737-745, 2000.
7. Kresh, J.Y., **Izrailtyan, I.**, Wechsler, A.S. "The Heart as a Complex Adaptive System." *InterJournal Complex Systems, CX.3 Biological Systems #221* (<http://www.interjournal.org/>), 1998.
8. Kresh, J.Y., **Izrailtyan, I.**, Morris, R.J., Wechsler, A.S. "Vascular Determinants of Univentricular Support." *ASAIO J.* Vol. 44, No. 5 (Sep-Oct), pp. M330-M335, 1998.
9. Kresh, J.Y., **Izrailtyan, I.** "Evolution in Functional Complexity of Heart Rate Dynamics: A Measure of Allograft Adaptability." *Am. J. Physiol.* Vol. 275, No 3 (Sep), pp. R720-R727, 1998.
10. **Izrailtyan, I.**, Kresh, J.Y. "Bradykinin Modulation of Isolated Rabbit Heart Function is Mediated by Intrinsic Cardiac Neurons." *Cardiovasc. Res.* Vol. 33, No. 3 (Mar), pp. 641-649, 1997.
11. Skinner, J.E., Wolf, S.G., Kresh, J.Y., **Izrailtyan, I.**, Armour, J.A., Huang, M.H. "Application of Chaos Theory to a Model Biological System: Evidence of Self-Organization in the Intrinsic Cardiac Nervous System." *Integr. Physiol. Behavior. Science.* Vol. 31, No. 2 (Apr-Jun), pp. 122-146, 1996.
12. **Izrailtyan, I.**, Frasch, H.F., Kresh J.Y. "Effects of Venous Pressure on Coronary Circulation and Intramyocardial Fluid Mechanics." *Am.J.Physiol.* Vol.267, No.3, Pt.2 (Sep), pp. H1002-H1009, 1994.
13. Alipov, N.N., **Izrailtyan, I.**, Lepetiukh, O.L., Sokolov, A.V. "Differential Neural Influences on the Heart Rate and Contractile force in Different Reflex Responses." *J. Physiol.* (USSR), Vol. 78, No. 10 (Oct), pp. 63-69, 1992.
14. **Izrail'tian, I.M.**, Alipov, N.N., Sokolov, A.V., Mukhtarova, Iu.P., Lepetiukh, O.L., Kuznetsova, T.E., Drokhanov, P.I. "Neural Regulatory Effects on the Contractility of Heart Ventricles." *Bull. Exp. Biol. Med.*, Vol. 114, No. 7 (Jul), pp. 8-10, 1992.
15. **Izrail'tian, I.M.**, Alipov, N.N., Lepetiukh, O.L., Sokolov, A.V., Mikerina, A.G., Komarova, O.V. "Organization of Reflex Sympathetic Influences on Rate and Force of Cardiac Contractions." *Bull. Exp. Biol. Med.*, Vol. 114, No. 7 (Jul), pp. 3-5, 1992.
16. Alipov, N.N., **Izrail'tian, I.M.**, Kuznetsova, T.E., Lepetiukh, O.L. "Myocardial Contractile Indices as a Means for Studying the Inotropic Reactions of Different Heart Chambers in a Computerized Experiment." *J. Physiol.* (USSR), Vol. 77, No. 1 (Jan), pp. 82-88, 1991.
17. Mikhailova, S.D., Bebikova, N.A., Semushkina, T.M., **Izrail'tian, I.M.**, Alipov, N.N. "Role of Myelinated and Unmyelinated Fibers of the Vagus Nerve in the Development of Ischemic Fibrillation of the Heart" *Bull. Exp. Biol. Med.*, Vol. 110, No. 7 (Jul), pp. 12-14, 1990.
18. **Izrail'tian, I.M.**, Alipov, N.N., Lepetiukh, O.L. "Selection of an Optimal System for Measurement of Blood Pressure." *Bull. Exp. Biol. Med.*, Vol. 108, No. 11 (Nov), pp. 526-528, 1989.
19. Alipov, N.N., Kuznetsova, T.E., **Izrail'tian, I.M.** "Positive Chronotropic and Inotropic Effects of Stimulation

of the Vagus Nerve in the Frog Heart.” *J. Physiol.* (USSR), Vol. 71, No. 3 (Mar), pp. 273-278, 1985.

Textbook chapters, invited articles and reviews

20. Izrailtyan, I., Mathew, J.P. “Perioperative Management of Valvular Heart Disease.” In: *Perioperative Medicine: Managing for Outcome*. Newman, M.F., Fleisher, L., Fink, M. (eds.), Elsevier, 2008, pp. 203-218
21. Kresh, J.Y., Izrailtyan, I., Wechsler, A.S. “Cardiac Adaptation to Stress: Chaos in the Heart.” In: *Unifying Themes in Complex Systems*, Yaneer Bar-Yam (ed.) Perseus Books, Westview Press (July), 2003.
22. Kresh, J.Y., Frasch, F., Izrailtyan, I., Brockman, S.K. “Intramyocardial Regulation of Coronary Dynamics.” In: *Cardiac Vascular Remodeling and Functional Interaction*. Maruyama, Y., Hori, M., Janicki, J.S. (eds.), Springer-Verlag, pp. 295-307, 1997.
23. Kresh, J.Y., Izrailtyan, I., Lodhavia, P.J., Brockman, S.K. “The Self-Regulatory Capacity of the Heart.” *J. Cardiovasc. Diagn. Procedures*. pp. 290, 1996.
24. Kresh, J.Y., Izrailtyan, I., Brockman, S.K. “Intramyocardial Hydraulic Regulation of Cardiac Mechanics and Energetics.” In: *Cardiovascular Systolic and Diastolic Function*. IOS Press, Amsterdam, pp. 405-413, 1996.
25. Kresh, J.Y., Izrailtyan, I. “Microvascular-Interstitial Interaction in the Regulation of Coronary Blood Flow,” In: *Tissue Perfusion and Organ Function*, Caimito, T., Shiga, T., McCuskey, R.S. (eds.), Elsevier Press: Amsterdam, pp. 109-121, 1996.

Abstracts and presentations

26. Tsang, M., Izrailtyan, I., Bilfinger, T., Oleszak, S., Moller, D. “Iatrogenic Rupture of Right Mainstem Bronchus after Double Lumen Endotracheal Intubation”, *PGA 62nd 2008 Annual Meeting Proceedings*, December, 2008
27. Bell, J., Baram, D., Bilfinger, T., Moller, D., Izrailtyan, I. “Anesthetic Management of A Patient with Severe Bilateral Mainstem Bronchial Obstruction”, *PGA 62nd 2008 Annual Meeting Proceedings*, December, 2008
28. Tsang, M., Izrailtyan, I., Bilfinger, T., Oleszak, S., Moller, D. “Iatrogenic Rupture of Right Mainstem Bronchus after Double Lumen Intubation”, *ASA 2008 Annual Meeting Proceedings*, October, 2008
29. Bell, J., Baram, D., Bilfinger, T., Izrailtyan, I. “Intraoperative Management of A Patient with Progressive Severe Airway Obstruction Following Bronchoscopic Biopsy”, *ASA 2008 Annual Meeting Proceedings*, October, 2008
30. Izrailtyan, I., Clark, J., Swaminathan, M., Podgoreanu, M.V., Mackensen, B., Davis, R.D., Mathew, J.P. “Intraoperative diagnosis of a pulmonary artery thrombus using contrast-enhanced transesophageal echocardiography”, *Anesthesia & Analgesia*, 2006
31. Smith, S.D., Benveniste, H.D., Morris, G.R., Hojer, S., Izrailtyan, I., Yu, M., Du, C., Ma, Y., Feinstein, I. “Direct Measurement of Intra Ventricular and Atrial Pressures Concurrent with MR Image Acquisition”, *JMRI*, 2006
32. Izrailtyan, I., Smith, S.D., Morris, R., Hojer, S., Feinstein, I., Glass, P.S.A., Benveniste, H.D. “Cardiac Magnetic Resonance Enabled Pressure-Volume Relationship Analysis in the Rodent”, *AUA*, 2006
33. Izrailtyan, I., Podgoreanu, M.V., Barbara G. Phillips-Bute, B.G., Stafford-Smith, M., Milano, C.A., Schwinn, D.A., Newman, M.F., Mathew, J.P. “Gender Related Differences in Genetic Polymorphisms and Major Adverse Outcomes Following Cardiac Surgery. *SCA 27th Annual Meeting Proceedings*, p.72, 2005.
34. Izrailtyan, I., Glass, P.S.A., Fowler, J., Baumann, A., Benveniste, H.D. “Bispectral Index (BIS) Guidance of Anesthesia Decreases the Interindividual Variability of the Maternal Brain Glucose Uptake in Non-Human Primates”, *ASA 2004 Annual Meeting Proceedings*, October, 2004.
35. Willoughby, P.H., Izrailtyan, I. “Off-Labeled Uses of Analgetic Devices”, *ASA 2004 Annual Meeting Proceedings*, October, 2004.
36. Izrailtyan, I., Fowler, J., Glass P.S.A., Rampil, I.J., Bicker, A.A., Baumann, A., Feinstein, I., Scharf, B., Siram, A., Benveniste, H.D. “Bispectral Index (BIS) monitoring during maternal-fetal brain imaging in a non-human primate model”, *AUA 51st Annual Meeting Proceedings*, May, 2004.
37. Du, C., Izrailtyan, I., Benveniste, H.D. "A new fluorometric and optical technological approach for tracking of intracellular calcium, blood volume and oxygenation changes in the rat brain in vivo ", *Optical Society America Biomedical Topical Meeting* , April, 2004.

38. Du C., Izrailtyan I., Benveniste H., "Optical and fluorescent imaging in vivo at BNL ", *NIBIB-DOE Workshop on Biomedical Imaging: Optical and X-ray Technologies*, Feb. 10-11, Maryland, 2004.
39. Willoughby, P.H., Izrailtyan, I. "Off-label use of devices in Anesthesia and Pain Management." *Postgraduate Assembly in Anesthesiology Proceedings* 2003, December 2003.
40. Du, C., Izrailtyan, I., Benveniste, H., "Fluorescence and optical detection of brain activation in vivo", *DOE Workshop on Neuroimaging*. Oct., Massachusetts, 2003.
41. **Izrailtyan, I.**, Moller, D., Willoughby, P.H.. "Anesthetic considerations for the patient status post heart transplant undergoing laparoscopic cholecystectomy." *Postgraduate Assembly in Anesthesiology Proceedings 2002*, Dec, p.257, 2002.
42. Dadparvar, S., Esteves, F., Arif, S., Cruz, R., Hussain, R., **Izrailtyan, I.** "TL-201 imaging in evaluation of Hodgkins disease." *Cancer Journal* 7(6): p.7, Nov-Dec, 2001.
43. Singh, B.K., **Izrailtyan, I.**, Jyothinagaram, M., Zeb, J., Hanif, M., Fefer, F., Sherrid, M.V., Yao, S.S., Chaudhry, F.A.. Risk Stratification and Prognosis Of Patients Following Coronary Artery Bypass Graft Surgery: Stress Echocardiography Versus Angiography. American Heart Association's Scientific Sessions 2001 , *Circulation* 104 (17): 2279 Suppl. S, October 23 2001.
44. Singh, B.K., Mahenthrian, J., Singh, V.P., **Izrailtyan, I.**, Qureshi, E., Acio, E., Chaudhry, F.A. "Contractile Reserve by Echocardiography is a Better Predictor of Cardiovascular Mortality than Nuclear Viability by SPECT Perfusion Imaging". ACC 50th Annual Scientific Session, *JACC* 37 (2): p.206A-207A, Suppl. A, February 2001.
45. Dou, Y., Dadparvar, S., **Izrailtyan, I.**, Patil, S., Slizofski, W.J., Hussain, R. "The Relation between Total body Weight and Bone Mineral Density in Post-Menopausal Women". *European Association of Nuclear Medicine Meeting*, (Sep) 2000.
46. Dou, Y., Dadparvar, S., **Izrailtyan, I.**, Patil, S., Slizofski, W.J. "Role of D-Dimer Study in Diagnosis of Pulmonary Embolism". *American Society of Emergency Radiology Symposium*, Vol. 11, No. 27 (Mar), p. 121, 2000.
47. Kresh, J.Y., **Izrailtyan, I.** "Evolution of Emergent Order in Heart-Rate Dynamics: Adaptation to Transplantation." *2nd International Complex Systems Conference*, NE Complex Systems Institute Proceedings, 1999.
48. Kresh, J.Y., **Izrailtyan, I.**, Wechsler, A.S. "Right-To-Left Heart Mechanical ACrosstalk@: The Role of Functional Hydraulic Properties of the Myocardium". In: Proceedings of The 1st Joint BMES/EMBS Joint Conference *Serving Humanity, Advancing Technology*, Oct. 13-16, Atlanta, GA, p. 226, 1999.
49. **Izrailtyan, I.**, Kresh, J.Y., Morris, R.J., Brozena, S.C., Kutalek, S.P. "Power Spectral Density of Heart Rate Variability in Detecting Cardiac Allograft Rejection." *NASPE* 20th Annual Scientific Sessions, *PACE* Vol. 22 (4) Part II, p. 741, 1999.
50. **Izrailtyan, I.**, Reiss, K., Narula, J., Schwartz, A. B., Kresh J.Y. "Ischemic Stress Adaptation of Cardiac Contractile Function is Mediated by Stress Activated Protein Kinase Signalling", ACC 48th Annual Scientific Session, *JACC* Vol. 33 (2) Suppl.A, pp. 344A, 1999.
51. Kresh, J.Y., **Izrailtyan, I.** "The Adaptive Response of the Heart-Rate Dynamics in Cardiac Allografts" 19th Congress of the European Society for Noninvasive Cardiovascular Dynamics and 13th International Conference of the Cardiovascular System Dynamics System, *J. Cardiovasc. Diagn. Procedures*. Vol. 15 (2), p. 150, 1998.
52. Kresh, J.Y., **Izrailtyan, I.**, Morris, R.J., Samuels, L. "Vascular Determinants of Univentricular Support." American Society for Artificial Organs 44th Annual Conference, *ASAIO* Vol. 44, No. 2, p. 40A, 1998.
53. **Izrailtyan, I.**, Narula, J., Schwartz, A.B., Kresh, J.Y. "Intrinsic Cardiac Neuroendocrine System Mediates Ischemic Myocardial Adaptation." American College of Cardiology 47th Annual Scientific Session, *JACC*, Vol. 31 (2) Suppl.A, pp. 134A-135A, 1998.
54. **Izrailtyan, I.**, Kresh, J.Y., Brozena, S.C., Morris, R.J., Brockman, S.K. "Heart Transplantation Induced Modulation of Cardiac Rhythm Dynamics: The Role of Intrinsic Neuroendocrine Control." American Heart Society 70th Annual Scientific Sessions, *Circulation*, Vol. 96, No. 8, p. 378 Suppl. S, October 21, 1997.
55. Kresh, J.Y., **Izrailtyan, I.**, Brozena, S.C., Morris, R.J., Brockman, S.K. "Changes in intrinsic autoregulatory systems of the heart are early indicators of cardiac allograft rejection." American Heart Society 70th Annual Scientific Sessions, *Circulation*, Vol. 96, No. 8, p. 2858 Suppl. S, October 21, 1997.
56. Kresh, J.Y., **Izrailtyan, I.**, Williams, J., Brozena, S. "Detection of Cardiac Allograft Autonomic Functional Reinnervation Using Measures of Heart-Rate Variability." American College of Cardiology 46th Annual Scientific

- Session, JACC. Vol. 29 (2), p. 78171 Suppl. A, February 1997.
57. **Izrailtyan, I.**, Kresh, J.Y. “Bradykinin-induced Modulation of Sinus Node Activity in a Decentralized Heart is Mediated by Intrinsic Cardiac Neurons.” American Heart Society 69th Annual Scientific Sessions, *Circulation*. Vol.94, No.8, Suppl., pp. I-489 - I-490, 1996.
 58. **Izrailtyan, I.**, Kresh, J.Y. “Intrinsic Nervous System: Differential Control of Cardiac Contractility and Automaticity.” Experimental Biology '96 Meeting, *FASEB J.* Vol. 10, No. 3, A336, 1996.
 59. **Izrailtyan, I.**, Kresh, J.Y. “Evidence for Intrinsic Cardiac Neural System in Isolated Heart.” Experimental Biology '95 Meeting, *FASEB J.* Vol. 9, p. A340, 1995.
 60. Kresh, J. Y., **Izrailtyan, I.**, Brockman, S. K. “Intramyocardial Hydraulic Regulation of Cardiac Mechanics and Energetics.” 11th International Conference of the Cardiovascular System Dynamics Society, *J. Cardiovasc. Diagn. Procedures*. Vol. 12, No. 2, p. 139, 1994.
 61. **Izrailtyan, I.**, Kresh, J. Y., Frasch, H. F. “Venous Pressure Modulation of Coronary Circulation and Intramyocardial Fluid Mechanics” 11th International Conference of the Cardiovascular System Dynamics Society, *J. Cardiovasc. Diagn. Procedures*. Vol. 12, No. 2, p. 137, 1994.
 62. Frasch, H.F., **Izrailtyan, I.**, Walinsky P., Kresh J.Y. “Coronary Sinus Modulation of Extravascular Pressure.” Experimental Biology '93 Meeting, *FASEB J.* Vol.7, p. A422, 1993.
 63. Alipov, N.N., **Izrailtyan, I.**, Sergeeva, O.V., Kuznetsova, T.E., Lepetiukh, O.L., Sokolov, A.V., Sasonko, M.L. “Differential Neural Influences on the Heart.” In: *Physiology and Pathophysiology of the Circulation and the Heart*, 3rd National Physiological Symposium, Russia, Kiev, Ukraine, p. 157, 1992.
 64. Alipov, N.N., Ignatova, E.D., **Izrailtyan, I.** “New findings on the effect of nn.vagi on the heart rate and rhythm.” In: *Proc. XVth Congress of Pavlov Physiological Society*, Russia, Leningrad, “Nauka”, Vol. 1, p. 200, 1987.
 65. Alipov, N.N, Kuznetsova, T.E., **Izrailtyan, I.** “Mechanisms of positive inotropic and chronotropic vagal effects on the heart.” In: *Physiology and Pathology of Cortico-Visceral Interactions*, Proc. of the 12th National Physiological Conference, Russia, Leningrad, “Nauka”, p.163, 1986.