

## CURRICULUM VITAE

November, 2012

KAREN S. LINDEMAN, M.D.

### DEMOGRAPHIC INFORMATION

#### Current Appointments

Associate Professor, Department of Anesthesiology/Critical Care Medicine  
The Johns Hopkins Hospital, Baltimore, Maryland

#### Personal Data

The Johns Hopkins University, School of Medicine  
Department of Anesthesiology/Critical Care Medicine  
1800 Orleans Street/ Sheikh Zayed Tower 8-120E  
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#### Education and Training

- 1975 - 1979 B.A. University of Pennsylvania, Philadelphia, Pennsylvania  
Economics and Natural Science  
(Magna Cum Laude, Phi Beta Kappa, General Honors Program)
- 1979 - 1983 M.D. University of Pennsylvania, School of Medicine, Philadelphia, PA
- 1983 - 1984 Intern, Department of Medicine, North Shore University Hospital  
Manhasset, New York
- 1984 - 1986 Resident, Department of Anesthesiology/Critical Care Medicine  
The Johns Hopkins University, Baltimore, Maryland
- 1986 - 1987 Fellow, Department of Anesthesiology/Critical Care Medicine  
The Johns Hopkins University, Baltimore, Maryland

#### Professional Experience

- 1979 - 1981 Economist, Energy Information Administration  
Department of Energy, Washington, DC
- 1987 - 1988 Assistant, Department of Anesthesiology/Critical Care Medicine,  
The Johns Hopkins Hospital, Baltimore, Maryland
- 1988 - Present Instructor, Department of Anesthesiology/Critical Care Medicine,  
The Johns Hopkins Hospital, Baltimore, Maryland
- 1989 - 1993 Assistant Professor, Department of Anesthesiology/Critical Care Medicine,  
The Johns Hopkins Hospital, Baltimore, Maryland
- 1994 - Present Associate Professor, Department of Anesthesiology/Critical Care Medicine,  
The Johns Hopkins Hospital, Baltimore, Maryland

## RESEARCH ACTIVITIES

### Publications

1. **Lindeman KS**, Hirshman CA, Freed AN. Effect of magnesium sulfate on bronchoconstriction in the lung periphery. *J Appl Physiol* 66:2527-32, 1989.
2. **Lindeman KS**, Hirshman CA, Freed AN. Calcium chelators induce bronchoconstriction in the canine lung periphery. *J Appl Physiol* 68:1114-20, 1990.
3. **Lindeman KS**, Hirshman CA, Freed AN. Calcium channel blockers modulate airway constriction in the canine lung periphery. *J Appl Physiol* 70:624-630, 1991.
4. **Lindeman KS**, Hirshman CA, Freed AN. Functional antagonism of airway constriction in the canine lung periphery. *J Appl Physiol* 71:1848-1855, 1991.
5. Mehr E, Hirshman CA, **Lindeman KS**. Mechanism of action of atracurium on airways. *Anesthesiology* 76:448-454, 1992.
6. **Lindeman KS**, Freed AN. Lemakalim attenuates hypocapnia- and dry air- induced bronchoconstriction in canine peripheral airways. *J Appl Physiol* 75:86-92, 1993
7. Mehr EH, **Lindeman KS**. Effects of halothane, propofol, and thiopental on peripheral airway reactivity. *Anesthesiology* 79:290-8, 1993.
8. **Lindeman KS**, Downey N, Liu MC, Hubbard WC, Kagey-Sobotka A, Hirshman CA. Importance of prostanoids in calcium chelator-induced airway constriction. *J Appl Physiol* 75:1110-6, 1993.
9. **Lindeman KS**, Hirshman CA. Corticosteroid withdrawal restores responses to calcium chelators and enhances cholinergic responsiveness. *Am Rev Respir Dis* 148:1581-1585, 1993.
10. **Lindeman KS**, Fernandes LB, Croxton TL, Hirshman CA. Role of potassium channels in hypoxic relaxation of porcine bronchi in vitro. *Am J Physiol (Lung Cell Mol Physiol)* 266:L232-7, 1994.
11. Stuart-Smith K, Bynoe TC, **Lindeman KS**, Hirshman CA. Differential effects of nitrovasodilators and nitric oxide on porcine tracheal and bronchial muscle in vitro. *J Appl Physiol* 77:11142-7, 1994
12. Baker SG, **Lindeman KS**. The paired availability design: A proposal for evaluating epidural analgesia during labor. *Statistics in Medicine* 13:2269-78, 1994.
13. **Lindeman KS**, Baker SG, Hirshman CA. Interaction between halothane and the noradrenergic, noncholinergic inhibitory system in porcine trachealis muscle. *Anesthesiology* 81:1142-7, 1994.
14. Yamakage M, **Lindeman KS**, Hirshman CA, Croxton TL. Intracellular pH regulates voltage-dependent  $Ca^{2+}$  channels in porcine tracheal smooth muscle cells. *Am J Physiol (Lung Cell Mol Physiol)* 268: L642-6, 1995.
15. **Lindeman KS**, Aryana A, Hirshman CA. Direct effects of inhaled nitric oxide on canine peripheral airways. *J Appl Physiol* 78:1898-1903, 1995.
16. Gwyn DR, **Lindeman KS**, Hirshman CA. Inhaled nitric oxide attenuates bronchoconstriction in canine peripheral airways. *Am J Respir Crit Care Med* 153:604-10, 1996.

17. Kumasaka D, **Lindeman KS**, Clancy J, Lande B, Croxton TL, Hirshman CA. MgSO<sub>4</sub> relaxes porcine airway smooth muscle by reducing Ca<sup>2+</sup> entry. *Am J Physiol (Lung Cell Mol Physiol)* 14:L469-74, 1996.
18. Groeben H, **Lindeman KS**, Davis FM, Sampson HA, Hirshman CA. Dermal and airway responses to monoclonal antibodies specific for canine IgE. *Veter Immunol and Immunopathol* 58:209-18, 1997.
19. Emala CW, Kumasaka D, Hirshman CA, **Lindeman KS**. Adenylyl cyclase messenger ribonucleic acid in myometrium: splice variant of type IV. *Biol Reprod* 59:169-75, 1998.
20. **Lindeman KS**, Croxton TL, Lande B, Hirshman CA. Hypocapnia-induced contraction of porcine airway smooth muscle. *Eur Respir J* 12: 1046-1052, 1998.
21. **Lindeman KS**, Hirshman CA, Kuhl JS, Levitsky HI, Emala CW. Chronic oxytocin pretreatment inhibits adenylyl cyclase activity in cultured rat myometrial cells. *Biol Reprod* 59:1108-15, 1998.
22. **Lindeman KS**, Forrester DJ, Hirshman CA, Emala CW. Myometrial adenylyl cyclase protein decreases on the last day of pregnancy in the rat: a trigger for labor. *Biol Reprod* 62:1422-26, 2000.
23. Gogarten W, Emala CW, **Lindeman KS**, Hirshman CA. Oxytocin and lysophosphatidic acid induce stress fiber formation in human myometrial cells via a pathway involving Rho-kinase. *Biol Reprod* 65: 401-6, 2001.
24. Baker SG, **Lindeman KS**, Kramer BS. The paired availability design for historical controls. *BMC Med Res Methodol* 1:9, 2001.
25. Baker SG, **Lindeman KS**. Rethinking historical controls. *Biostatistics* 2:383-96, 2001.
26. Gogarten W, **Lindeman KS**, Hirshman CA, Emala CW. Tumor necrosis factor stimulates adenylyl cyclase activity in human myometrial cells. *Biol Reprod* 68:751-7, 2003.
26. Baker SG, **Lindeman KS**, Kramer BS, Clarifying the role of principal stratification in the paired availability design. *Int J Biostatistics* 7:25, 2011.

### Invited Review Articles

**Lindeman KS**, Hirshman CA. MAO inhibitors: Must they be discontinued before anesthesia? In: Questions and Answers. *JAMA* 260:3507, 1988.

**Lindeman KS**. Anesthesia for cesarean section. *Anesthesiology Report* 2:52-57, 1989.

**Lindeman KS**. Anesthesia, airways, and asthma. *Seminars in Anesthesia* 14:221-5, 1995.

### Book Chapters

**Lindeman KS**, Hirshman CA. Bronchial inhalation challenge testing in dog models of asthma. In: Provocative Challenge Procedures: Background and Methodology. Mount Kisco, NY: Futura Publishing Company, Inc., 1989.

**Lindeman KS**. Pathophysiology of asthma and implications for management in the perioperative period. Advances in Anesthesia, Volume X. St. Louis: Mosby-Year Book, Inc., 1993.

**Lindeman KS.** Respiratory disease. In: Obstetric Anesthesia: Principles and Practice, Chestnut DH (Ed). St. Louis: Mosby Year-Book, Inc., 1994.

Shabaz PW, **Lindeman KS.** Placenta previa. In: Essence of Anesthesia Practice, Roizen MF (Ed). Philadelphia, PA: W.B. Saunders Co., 1997.

**Lindeman KS.** Respiratory disease. In: Obstetric Anesthesia: Principles and Practice, 2<sup>nd</sup> Edition, Chestnut DH (Ed). Philadelphia, PA: Mosby Year-Book, Inc., 1999.

Shabaz PW, **Lindeman KS.** Placenta previa. In: Essence of Anesthesia Practice, Roizen MF (Ed). Philadelphia, PA: W.B. Saunders Co., 2002.

**Lindeman KS.** Respiratory disease. In: Obstetric Anesthesia: Principles and Practice, 3<sup>rd</sup> Edition, Chestnut DH (Ed). Philadelphia, PA: Mosby Year-Book, Inc., 2004.

Shabaz PW, **Lindeman KS.** Placenta previa. In: Essence of Anesthesia Practice, Roizen MF (Ed). Philadelphia, PA: W.B. Saunders Co., 2010.

### **Invited Editorials**

Respiratory disease. In: Obstetric Anesthesia: Principles and Practice, 3<sup>rd</sup> Edition, Chestnut DH (Ed). Philadelphia, PA: Mosby Year-Book, Inc., 2009.

Baker SG, **Lindeman KS.** Randomized and nonrandomized studies: Statistical considerations (editorial). *Anesthesiology* 92:928-9, 2000.

### **Invited Lectures**

"Intraoperative management of the asthmatic patient" Annual Meeting, American Society of Anesthesiologists, October 1989.

"Anesthesia for the patient with asthma" Postgraduate Assembly, New York State Society of Anesthesiologists, December 1990.

"Anesthesia, airways, and airway tone" Grand Rounds, Department of Anesthesiology, Johns Hopkins University, April 1992.

"Volatile anesthetics and the maintenance of airway tone" Grand Rounds, Department of Anesthesiology, Georgetown University, May 1992.

"Pharmacology of local anesthetics" Annual Update on Obstetric Anesthesia. Johns Hopkins University, September 1992.

"Physiologic changes of pregnancy" Second Annual Update on Obstetric Anesthesia. Johns Hopkins University, August 1993.

"Anesthesia for an asthmatic patient undergoing cesarean section" Problem-Based Luncheon Discussion. Annual Meeting, American Society of Anesthesiologists, October 1993.

"Physiologic changes of pregnancy" Third Annual Update on Obstetric Anesthesia, Johns Hopkins University, August 1994.

"Anesthesia for an asthmatic patient undergoing cesarean section" Problem - based Learning Discussion. Annual Meeting, American Society of Anesthesiologists, October 1994.

"Does labor epidural analgesia affect the incidence of cesarean section?" special seminar, Holy Cross Hospital Department of Anesthesiology, Silver Spring, MD, March 1995.

"Physiology of pregnancy" Fourth Annual Update on Obstetric Anesthesia. Johns Hopkins University, August 1995.

"Anesthesia for an asthmatic patient undergoing cesarean section" Problem-Based Learning Discussion. Annual Meeting, American Society of Anesthesiologists, October 1995.

"New local anesthetics": Fifth Annual Update on Obstetric Anesthesia. Johns Hopkins University, September 1996.

"Signal transduction in uterine smooth muscle" Grand Rounds, Department of Anesthesiology, University of Alabama at Birmingham, June 1997.

"Rovipacaine and remifentanil in obstetric anesthesia" Sixth Annual Update on Obstetric Anesthesia. Johns Hopkins University, August 1997.

"Crossregulation of myometrial signal transducing pathways" Research Seminar, Department of Anesthesiology, Columbia University, November 1997.

"Influence of epidural analgesia for labor on obstetric outcome" Grand Rounds, Department of Anesthesiology, Fairfax/INOVA Health System, December 1997.

"Physiology of pregnancy": Seventh Annual Update on Obstetric Anesthesia. Johns Hopkins University, August 1998.

"Signal transduction in uterine smooth muscle" Research Seminar, Department of Anesthesiology, University of Pennsylvania Medical Center, September 1998.

"Myometrial signal transduction: changes during pregnancy and labor" High risk Seminar, Department of Gynecology and Obstetrics, The Johns Hopkins University, April 1999.

"New agents for labor analgesia: levobupivacaine and ropivacaine" Ninth Annual Update on Obstetric Anesthesia, Johns Hopkins University, August 2000.

"Toxemia of pregnancy and HELLP: what is new?" Eleventh Annual Update on Obstetric Anesthesia, Johns Hopkins University, September 2002.

"Physiologic changes of pregnancy," Thirteenth Annual Update on Obstetric Anesthesia, Johns Hopkins University, September 2004.

"Anesthesia for an asthmatic patient undergoing cesarean section." Problem based learning discussion, Annual Meeting, American Society of Anesthesiologist, October 2008.

## **Extramural Sponsorship**

### **Grants**

Principal Investigator, W.M. Keck Foundation Clinician-Scientist Award, "Calcium chelator - induced airway constriction" 1989-1991

Principal Investigator, National Heart, Lung, and Blood Institute, "Mechanisms of calcium chelator - induced airway constriction" K11 HL02417, 1990-1995

Principal Investigator, F.A.E.R. Research Starter Grant, "The role of mediators of inflammation in nonspecific airway constriction" 1992

Co-Investigator, Project 2: N.I.H. Program Project Grant PO1-HL 01343, "Local Regulation of Airway Tone" 1993-1997.

Mentor, Society for Obstetric Anesthesia and Perinatology/Braun Fellowship, "Crossregulation of receptor signal transducing pathways in uterine smooth muscle," 1995-1996.

Principal Investigator, James A. Shannon Director's Award, National Institute of Child Health/Human Development, R55 HD/OD34782, "Regulation of myometrial adenylyl cyclase isotype expression," 1997-1999.

Principal Investigator, National Institute of Child Health/Human Development, R29 HD34782, "Regulation of myometrial adenylyl cyclase isotype expression," 1998-2002. Percentile rank:1.6.

### **Society Memberships**

American Society of Anesthesiologists, 1984  
International Anesthesia Research Society, 1984  
Maryland-DC Society of Anesthesiologists, 1984

American Society of Regional Anesthesia, 1987  
American Thoracic Society, 1988  
Society for Obstetric Anesthesia and Perinatology, 1988  
Association of University Anesthesiologists, 1993  
Society for the Study of Reproduction, 1998

### **Professional Activities**

#### **National Committees:**

1992-1994     Subcommittee on Obstetric Anesthesia and Perinatology, American Society of Anesthesiologists

#### **Departmental Committees:**

1988-2002     Clinical Competence Committee  
1988-2002     Educational Committee

#### **Consultant and Referee For:**

*Anesthesiology*  
*Journal of Applied Physiology*  
*Critical Care Medicine*  
*American Journal of Physiology, Lung Cell. Molec. Biol.*  
*American Journal of Obstetrics and Gynecology*  
*Anesthesia and Analgesia*

**Editorial Board:**

1994-2000 Associate Editor, Anesthesiology

**Discussant:**

1994 Obstetric Anesthesia II, American Society of Anesthesiologists Annual Meeting

2000 Judge, Gertie Marx Symposium, Society for Obstetric Anesthesia and Perinatology Annual Meeting

**Certification:**

1984 Certificate, National Board of Medical Examiners

1986 Maryland State Medical License

1987 American Board of Anesthesiology

### **Fellows Trained**

Noelle Downey, M.D.	1990-1991
Elon H. Mehr, M.D.	1992-1993
Darryl R. Gwyn, M.D.	1994-1995
David J. Kumasaka, M.D.	1994-1996, S.O.A.P./Braun Fellowship Award (1995)
Douglas J. Forrester, M.D.	1996-1997, 2 <sup>nd</sup> place in Gertie Marx Symposium at S.O.A.P. Annual Meeting (1997)
Wiebke Gogarten, M.D.	1999 – 2000

### **Visiting Professor**

Department of Anesthesiology, Georgetown University, Washington, DC 1992.

Department of Anesthesiology, University of Alabama at Birmingham, Birmingham, AL, 1997.