

## CURRICULUM VITAE

Qing Lu, D.V.M., Ph.D.

### **Business Address:**

Alpert Medical School of Brown University  
 Providence VA Medical Center/ Ocean State Research Institute  
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### **CURRENT POSITION**

Associate Professor of Medicine (Research), Alpert Medical School of Brown University  
 Research Biologist, Providence VA Medical Center/ Ocean State Research Institute

### **EDUCATION**

1989	D.V.M.	Veterinary Medicine	Anhui College of Agriculture and Technology
1996	M.S.	Physiology & Biochemistry	Nanjing Agriculture University
1999	Ph.D.	Physiology & Cell Biology	The Chinese Academy of Sciences
2013	Teaching Certificate I	The Sheridan Teaching Center, Brown University	
2015	<i>ad eundem</i> M.A.	Brown University	

### **POSTDOCTORAL TRAINING**

1999-02 University of Michigan Medical School, *Reproductive Biology & Biochemistry*, Advisors: Gary Smith, Ph.D. and Roland Kwok, Ph.D.  
 2002-03 Brown University, *Pulmonary Endothelial Biology*, Advisor: Sharon Rounds, M.D.

### **HONORS**

- Academic Achievement Award, 1st Prize, Anhui College of Agriculture and Technology, China, 1986
- Academic Achievement Award, 1st Prize, Anhui College of Agriculture and Technology, China, 1987
- Academic Achievement Award, 1st Prize, Anhui College of Agriculture and Technology, China, 1988
- Hefei City Science and Technology Progress Award, 2<sup>nd</sup> Prize, China, 1992
- Anhui Province Science and Technology Progress Award, 3<sup>rd</sup> Prize, China, 1992
- Distinguished Graduate Student Achievement Award, Nanjing Agricultural University, China, 1995
- Distinguished Graduate Student Achievement Award, The Chinese Academy of Sciences, 1998
- Weihua Science and Technology Award, 1<sup>st</sup> Prize, The Chinese Academy of Sciences, 1999
- Best Poster, RI Science and Technology Advisory Council meeting, June 3, 2008
- Basic Science Research Article of the Month: "Cigarette Smoke Disrupted Lung Endothelial Barrier Integrity and Increased Susceptibility to Acute Lung Injury via Histone Deacetylase 6" by The Assembly of Pulmonary Circulation, ATS, 2016

### **ACADEMIC APPOINTMENTS**

2003-04 Instructor of Medicine (Research), Alpert Medical School of Brown University  
 2004-14 Assistant Professor of Medicine (Research), Alpert Medical School of Brown University  
 2014-Present Associate Professor of Medicine (Research), Alpert Medical School of Brown University

### **HOSPITAL APPOINTMENTS**

2002-Present Research Biologist, Providence VA Medical Center  
 2015-Present Research Biologist, Ocean State Research Institute

### **OTHER APPOINTMENTS**

1989-93 Veterinarian, Hefei Zoo, China

### **STUDY SECTIONS/ GRANT PEER REVIEW COMMITTEES**

2007 Peer Review Committee Member, American Heart Association Northeast Consortium 1B  
 2008-09 Peer Review Committee Member, American Heart Association Region I  
 2009 Peer Reviewer, the Medical Research Council, United Kingdom  
 2009-10 Peer Reviewer, National Priorities Program, Qatar National Research Fund  
 2013 Member of Scientific Review Study Section, American Thoracic Society  
 2014 Department of Defense, PRMRP, Pre-Respiratory Health-2 - Online Reviewer  
 4/21/2014 CPVB COBRE Pilot Project Review Panel  
 5/27/2014 CPVB COBRE Pilot Project Review Panel  
 12/18/2014 CPVB COBRE Pilot Project Review Panel  
 5/2/2015 CPVB COBRE Pilot Project Review Panel  
 4/25/2016 CPVB COBRE Mocking section review panel  
 4/29/2016 CPVB COBRE Pilot Project Review Panel  
 2016 Department of Defense, PRMRP, Pre- Acute Lung Injury - 2 - Online Reviewer  
 2017 NIH RIBT study section, ad hoc Member (Nov.)

### **EDITORIAL SERVICES**

2014-Present Academic Editor, PLOS ONE

### **MANUSCRIPT REVIEWER (Ad Hoc)**

Journal of Biological Chemistry; FASEB Journal; Arteriosclerosis, Thrombosis, and Vascular Biology; American Journal of Respiratory and Critical Care Medicine; American Journal of Respiratory Cell and Molecular Biology; American Journal of Physiology Lung Cellular and Molecular Physiology; Proceedings of the American Thoracic Society; Microvascular Research; Respiratory Research; Physiology Research; Free Radical Biology and Medicine; Lung; International Journal of COPD; European Respiratory Journal; Innate Immunity; Journal of Zhejiang University Science; International Journal of Immunology Research; Archives of Pharmacological Research

### **HOSPITAL COMMITTEES**

2004-07 Member, Research & Development Committee, Providence VAMC  
 2004-Present Organizer of Vascular Research Laboratory biweekly lab meeting  
 2005-13 Member, Institutional Animal Care and Use Committee, Providence VAMC  
 2009-12 Member, Subcommittee for Research Safety, Providence VAMC  
 2012-Present **Vice-Chair**, Subcommittee for Research Safety, Providence VAMC  
 2013-Present **Chair**, Institutional Animal Care and Use Committee, Providence VAMC

### **UNIVERSITY COMMITTEES**

2005-07 Thesis Committee for ZhiZhan Gu, Ph.D. Brown MPPB Graduate Program  
 2013-Present Thesis Advisor for Eboni Chamber, PhD, Brown Pathology Graduate Program  
 2017-Present Thesis Committee for Bedia Akosman, Ph.D. Brown Pathology Graduate Program  
 2016-Present Member of the Medical Faculty Executive Committee, Brown Medical School

### **MEMBERSHIP & SERVICES IN PROFESSIONAL SOCIETIES**

2000-02	Member of Society for the Study of Reproduction
2002-03	Member of American Society for Cell Biology
2005-present	Member of American Thoracic Society
2011	Lead Facilitator, Poster Session, American Thoracic Society International Conference
2013	Member of the Membership Committee, Chinese-American Lung Association
2013	Member of the Program Committee, Chinese-American Lung Association
2013	Co-chair, Poster Discussion Session, American Thoracic Society International Conference
2017	Chair of the Membership Committee, Chinese-American Lung Association

### **PROFESSIONAL DEVELOPMENT**

2009	Jackson Laboratory Workshop: "Phenotyping Mouse Models of Human Lung Disease"
2012	FASEB Career Center Workshop: "Grant Writing for Success"
2012	FASEB Career Center Workshop: "Scientific Peer Review of NIH Grants"
2012	AAMC Mid-Career Woman Faculty Professional Development Seminar
2015	Grant Writing Workshop, Office of Vice-President for Research, Brown University
2016	Grant Writing Workshop, Office of Vice-President for Research, Brown University
2017	ATS profession development workshop: "walking the tightrope to tenure and promotion: your first seven years"

### **PUBLICATIONS LIST** (peer reviewed, the order of time)

#### **A) Corresponding-authored original publications:**

1. **Lu Q**, Harrington EO, Jackson H, Morin N, Shannon C, Rounds S. Transforming growth factor-beta1-induced endothelial barrier dysfunction involves Smad2-dependent p38 activation and subsequent RhoA activation. *Journal of Applied Physiology (1985)*, 2006, 101: 375-84.
2. **Lu Q**. Transforming growth factor-beta1 protects against pulmonary artery endothelial cell apoptosis via ALK5. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2008, 295: L123-33. PMID: PMC2494777.
3. **Lu Q**, Patel B, Harrington EO, Rounds S. Transforming growth factor-beta1 causes pulmonary microvascular endothelial cell apoptosis via ALK5. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2009, 296: L825-38. PMID: PMC2681346.
4. **Lu Q**, Sakhatskyy P, Grinnell K, Newton J, Ortiz M, Wang Y, Sanchez-Esteban J, Harrington EO, Rounds S. Cigarette smoke causes lung vascular barrier dysfunction via oxidative stress-mediated inhibition of RhoA and focal adhesion kinase. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2011, 301: L847-57. PMID: PMC3233834.
5. **Lu Q**, Newton J, Hsiao V, Shamirian P, Blackburn MR, Pedroza M. Sustained adenosine exposure causes lung endothelial barrier dysfunction via nucleoside transporter-mediated signaling. *American Journal of Respiratory Cell and Molecular Biology*, 2012, 47: 604-13. PMID: PMC3547102.
6. **Lu Q**, Sakhatskyy P, Newton J, Shamirian P, Hsiao V, Curren S, Gabino Miranda GA, Pedroza M, Blackburn MR, Rounds S. Sustained adenosine exposure causes lung endothelial apoptosis: a possible contributor to cigarette smoke-induced endothelial apoptosis and lung injury. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2013, 304: L361-70. PMID: PMC3602741.
7. Sakhatskyy P, Gabino Miranda GA, Newton J, Lee CG, Choudhary G, Vang A, Rounds S, **Lu Q**. Cigarette smoke-induced lung endothelial apoptosis and emphysema are associated with impairment of FAK and eIF2 $\alpha$ . *Microvascular Research*, 2014, 94: 80-9. PMID: PMC4185927.
8. Borgas D, Chambers E, Newton J, Ko J, Rivera S, Rounds S, **Lu Q**. Cigarette smoke disrupted lung endothelial barrier integrity and increased susceptibility to acute lung injury via histone deacetylase 6. *American Journal of Respiratory Cell and Molecular Biology*, 2016, 54: 683-96. PMID: PMC4942194.
9. Sakhatskyy P, Wang ZK, Borgas D, Lomas-Neira J, Chen Y, Ayala A, Rounds S. and **Lu Q**. Double-hit mouse model of cigarette smoke priming for acute lung injury. *American Journal of Physiology*

*Lung Cellular and Molecular Physiology*, 2017, 312: L56-67. PMID: PMC5283923.

10. Lu Q, Mundy M, Chambers E, Lange T, Newton J, Borgas D, Yao HW, Choudhary G, Basak R, Oldham M, Rounds S. Alda-1 protects against acrolein-induced acute lung injury and endothelial barrier dysfunction. *American Journal of Respiratory Cell and Molecular Biology*, 2017 Aug 1. DOI: 10.1165/rcmb.2016-0342OC.

#### B) Other original publications:

11. Jiang FL, He YZ, Jiang H and Lu JL. (previously used name). A case of successful propagation of Black Muntjac in captivity. *Proceedings of Chinese Zoological Gardens*, 1993, 2: 96-103.
12. Chen L, Lu Q, Mao XZ, Zhu ZK, and Fan ZH. Chronic catheterization on vascular of sheep fetus. *Chinese Journal of Obstetrics and Gynecology*, 1996, 31(6): 381-382.
13. Shi H, Zhu ZK, Lu Q, Sun JF and Mao XZ. Effects of exogenous cholic acid on the concentration of cholane-glycinate in serum in sheep and rat. *Animal Husbandry and Veterinary Medicine*, 1999, 31 (1): 14-16.
14. Lu Q, Shi H and Mao XZ. The effect of cholic acid loading on pregnant rats on plasma nutrition metabolism and endocrine activity as well as the growth of fetus. *Chinese Journal of Applied Physiology*, 1999, 15 (1): 76-81.
15. Lu Q, Mao XZ, Chen L and Zhu ZK. The characterization of sheep fetal nutrition metabolism and endocrine activity during late gestation, *Acta Zoologica Sinica*, 1999, 45 (2): 162-169.
16. Sun QY\*, Lu Q\*, Breitbart H, Chen DY. cAMP inhibits mitogen-activated protein (MAP) kinase activation and resumption of meiosis, but exerts no effects after spontaneous germinal vesicle breakdown (GVBD) in mouse oocytes. *Reproduction, Fertility and Development*, 1999;11 (2):81-6.
17. Lu Q, Sun QY, Breitbart H, Chen DY. Expression and phosphorylation of mitogen-activated protein kinases during spermatogenesis and epididymal sperm maturation in mice. *Archives of Andrology*, 1999, 43 (1):55-66.
18. Lu Q, Smith GD, Chen DY, Yang Z, Han ZM, Schatten H, Sun QY. Phosphorylation of mitogen-activated protein kinase is regulated by protein kinase C, cyclic 3',5'-adenosine monophosphate, and protein phosphatase modulators during meiosis resumption in rat oocytes. *Biology of Reproduction*, 2001, 64(5):1444-50.
19. Lu Q, Smith GD, Chen DY, Han ZM, Sun QY. Activation of protein kinase C induces mitogen-activated protein kinase dephosphorylation and pronucleus formation in rat oocytes. *Biology of Reproduction*, 2002, 67(1):64-9.
20. Lu Q, Dunn RL, Angeles R, Smith GD. Regulation of spindle formation by active mitogen-activated protein kinase and protein phosphatase 2A during mouse oocyte meiosis. *Biology of Reproduction*, 2002, 66(1):29-37.
21. Lu Q, Hutchins AE, Doyle CM, Lundblad JR, Kwok RP. Acetylation of cAMP-responsive element-binding protein (CREB) by CREB-binding protein enhances CREB-dependent transcription. *Journal of Biological Chemistry*, 2003, 278(18):15727-34.
22. Kramer K, Harrington EO, Lu Q, Bellas R, Newton J, Sheahan KL, Rounds S. Isoprenylcysteine carboxyl methyltransferase activity modulates endothelial cell apoptosis. *Molecular Biology of the Cell*, 2003, 14: 848-57. PMID: PMC151564.
23. Lu Q, Harrington EO, Hai CM, Newton J, Garber M, Hirase T, Rounds S. Isoprenylcysteine carboxyl methyltransferase modulates endothelial monolayer permeability: Involvement of RhoA carboxyl methylation. *Circulation Research*, 2004, 94: 306-15.
24. Harrington EO, Shannon CJ, Morin N, Rowlett H, Murphy C, Lu Q. PKCdelta regulates endothelial basal barrier function through modulation of RhoA GTPase activity. *Experimental Cell Research*, 2005, 308: 407-21.
25. Lu Q, Harrington EO, Newton J, Jankowich M, Rounds S. Inhibition of ICMT induces endothelial cell apoptosis through GRP94. *American Journal of Respiratory Cell and Molecular Biology*, 2007, 37: 20-30. PMID: PMC1899353.
26. Lu Q\*, Jankowich M\*, Newton J, Harrington EO, Rounds S. Alterations in molecular chaperones and eIF2alpha during lung endothelial cell apoptosis. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2010, 298: L501-8. PMID: PMC2853340.

27. **Lu Q**, Harrington EO, Newton J, Casserly B, Radin G, Warburton R, Zhou Y, Blackburn MR, Rounds S. Adenosine protected against pulmonary edema through transporter- and receptor A2-mediated endothelial barrier enhancement. *American Journal of Physiology Lung Cellular and Molecular Physiology*, 2010, 298: L755-67. PMID: PMC2886613.
28. Daniel J Klionsky, et al **Lu Q** et al. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*, 2016, 12 (1):1-222. PMID: PMC4835977.
29. Yoon PO, Park JW, Lee CM, Kim SH, Kim HN, Ko Y, Bae SJ, Yun S, Park JH, Kwon T, Kim WS, Lee J, **Lu Q**, Kang HR, Cho WK, Elias JA, Yang JS, Park HO, Lee K, Lee CG. Self-assembled micelle interfering RNA for effective and safe targeting of dysregulated genes in pulmonary fibrosis. *Journal of Biological Chemistry*, 2016, 291 (12): 6433-46. PMID: PMC4813554.
30. Vang A, Clements R, Chichger H, Kue N, Allawzi A, O'Connell KA, Dudley S, Euy-Myoung Jeong EM, Sakhatskyy P, **Lu Q**, Zhang P, Rounds S, Choudhary G. Effect of  $\alpha 7$  nicotinic acetylcholine receptor activation on cardiac fibroblasts: a mechanism underlying RV fibrosis associated with cigarette smoke exposure. *American Journal of Physiology Lung Cellular and Molecular Physiology*. 2017, 312: L748-59. PMID: PMC5451597.

\* These authors contributed equally to this work.

### C) Invited Review Articles:

31. **Lu Q**, Chen L and Mao XZ. The roles of insulin-like growth factors (IGFs) and the regulation of its activation. *Abroad Animal Science and Technology*, 1996, 23 (4): 4-6.
32. **Lu Q** and Mao XZ. The characterization of fetus nutrition metabolism and endocrine activity, *Acta Universitatis Agriculturae Boreali-occidentalis*, 1999, 27 (1): 88-93.
33. **Lu Q**, Liu JL and Chen DY. Cytoplasmic calcium signal. *Chemistry of Life*, 1999, 19 (2): 78-82.
34. Liu JL, **Lu Q** and Chen DY. Nuclear calcium signal. *Chinese Bulletin of Life Science*, 2001, 13(1): 41-44.
35. **Lu Q**, Harrington EO, Rounds S. Apoptosis and lung injury. *Keio Journal of Medicine*. 2005, 54(4):184-9.
36. Rounds S, **Lu Q**, Harrington EO, Newton J, Casserly B. Pulmonary endothelial cell signaling and function. *Transactions of the American Clinical and Climatological Association*. 2008; 119: 155-67; discussion 167-9. PMID: PMC2394687.
37. **Lu Q**, Rounds S. Focal adhesion kinase and endothelial cell apoptosis. *Microvascular Research*. 2012, 83: 56-63. PMID: PMC3189508.
38. Rounds S. **Lu Q**. Cigarette smoke alters lung vascular permeability and endothelial barrier function. *Pulmonary Circulation*. Accepted for publication.
39. **Lu Q. (corresponding author)**, Gottlieb, E., Rounds, S. Effects of cigarette smoke on pulmonary endothelial cells. *American Journal of Physiology Lung Cellular and Molecular Physiology*, Accepted for publication.

### D) Book chapters:

40. **Lu Q**. Inter-activation between sperm and oocyte during fertilization. In: *Biology of Fertilization*. Edited by D.Y. Chen, Science Press, Beijing, China, 2000, p.199-222.
41. **Lu Q**. The roles of protein kinases and phosphatases in gametogenesis, oocyte maturation and fertilization. In: *Biology of Fertilization*. Edited by D.Y. Chen, Science Press, Beijing, China, 2000, p. 276-315.
42. Rounds S, Harrington EO, and **Lu Q**. Carboxyl methylation of small GTPases and endothelial cell function. In: *Cell Signaling in Vascular Inflammation*. Edited by J. Bhattacharya, Humana Press, Totowa, NJ, 2005, p. 51-60.
43. Harrington EO, **Lu Q**, and Rounds S. Endothelial cell apoptosis. In: *Endothelial Biomedicine*. Edited by W. C. Aird, Cambridge University Press, New York, NY, USA, 2007, p.1081-1097.
44. **Lu Q** and Rounds S. Pulmonary endothelial cell death: implications for lung disease pathogenesis. In: *The Pulmonary Endothelium: Function in health and disease*. Edited by N. F. Voelkel and S. Rounds. John Wiley & Sons, Ltd. Chichester, UK, 2009, p.243-260.

45. **Lu Q (corresponding author)**, Rounds S. Adenosine and endothelial cell function. In: *Recent Advances in Pulmonary Vascular Biology*, Edited by Yong-Xiao Wang, Research Signpost, Kerala, India, 2011, p343-361.
46. Chambers E, Rounds S. and **Lu Q (corresponding author)**. Pulmonary endothelial cell apoptosis in emphysema and acute lung injury. In: *Advances in Anatomy Vol. 228 Molecular and Functional Insights Into the Pulmonary Vasculature*. Edited by Kaushik Parthasarathi. Springer, 2017, In press.

#### **E) Manuscripts submitted or in preparation:**

47. Ji YP, Tingyu Shi TY, Zhang YY, Lin D, Linghu K, Xu Y, Tao L, **Lu Q. (co-corresponding author)\***, Shen X\*. Cardiovascular protective effects of natural oil from *Fructus Alpinia Zerumbet*: Relying on TLR4/IKK/NF- $\kappa$ B in vivo and in vitro.
48. Venkatramanan R, Sakhatskyy P, Borgas D, Rounds S, and **Lu Q**. Effect of cigarette smoke on gene profile. In preparation
49. Junsuk Ko, Eboni Chambers, Sharon Rounds, Julie Newton, and **Qing Lu**. Mitochondrial dysfunction---a shared mechanism of cigarette smoke- and sustained adenosine-induced endothelial injury. In preparation.
50. Eboni Chambers, Alexis White, Zhengke Wang, Alfred Ayala, Sharon Rounds, Michael Blackburn, **Qing Lu**. Inhibition of ENT1 protected against *Pseumonas aeruginosa*-induced acute lung injury via adenosine receptor-mediated suppression of inflammasome activation.

#### **ABSTRACTS FOR NATIONAL & INTERNATIONAL CONFERENCES**

##### **1999**

1. **Lu Q**, Sun QY, Chen DY, Angeles R, and Smith GD. Identification and localization of MAPK and PP2A during mouse oocyte maturation. *University of Michigan, Reproductive Sciences Program and Department of OB/GYN, Poster Day, November 19, 1999, Ann Arbor, MI. Poster presentation by Lu Q.*

##### **2000**

2. **Lu Q**, Angeles R, and Smith GD. Localization of phosphorylated-MAPK and PP2A during mouse oocyte meiosis and their roles in microtubule polymerization. *Society for the Study of Reproduction (SSR) 2000 Annual Meeting, July 25-31, 2000, Madison, Wisconsin. Oral presentation by Lu Q.*

##### **2001**

3. **Lu Q**, Hutchins AE and Kwok RPS. Lysine mutation within CREB activation domain enhances gene expression. *University of Michigan, Reproductive Sciences Program and Department of OB/GYN, Poster Day, November 2, 2001, Ann Arbor, MI. Poster presentation by Lu Q.*
4. **Lu Q** and Kwok RPS. The role of acetylation on cAMP-mediated gene activation. *Michigan Diabetes Research and Training Center, Winter Symposium, March 17, 2001, Ann Arbor, MI. Poster presentation by Lu Q.*
5. **Lu Q**, Smith GD, Chen DY, and Sun QY. Phosphorylation of MAP kinase is regulated by protein kinase C, cAMP, and protein phosphatase modulators during meiosis resumption in rat oocytes. *Biology of the Mammalian Oocyte: Influences on Human In Vitro Maturation and Cryopreservation, March 2, 2001, Miami Beach, Florida. Poster presentation by Lu Q.*

##### **2002**

6. **Lu Q**, Harrington EO, Newton J and Rounds S. Overexpression of isoprenylcysteine carboxyl methyltransferase (ICMT) activates Rho GTPases and increases endothelial monolayer permeability. *The American Society for Cell Biology 2002 Annual Meeting, December 14-18, 2002, San Francisco, CA. Poster presentation by Lu Q. Published in Molecular Biology of the Cell 13: 294a, 2002.*
7. **Lu Q**, Harrington EO, Newton J and Rounds S. Effect of isoprenylcysteine carboxyl methyltransferase (ICMT) on Rho GTPases and endothelial monolayer permeability. *Grover Conference on Proinflammatory Signaling Mechanisms in the Pulmonary Circulation. September 5-8, 2002, Sedalia, Colorado. Poster presentation by Lu Q.*
8. Kwok RPS, **Lu Q**, Hutchin AE, Doyle CM and Lundblad JR. The role of acetylation in cAMP-activated gene expression. *Endocrinology 2002 Annual Meeting, June 19-22, 2002, San Francisco,*

CA. Oral presentation by Kwok RPS.

### 2003

- Harrington EO, **Lu Q**, Newton J, Morin N and Rounds S. Inhibition of RhoA by adenosine/homocysteine attenuates thrombin-induced endothelial barrier dysfunction. *American Thoracic Society 2003 International Conference*, May 16-21, 2003, Seattle, Washington. Poster presentation by Harrington EO. Published in *American Journal of Respiratory and Critical Care Medicine* 167: A565, 2003.

### 2004

- Lu Q**, Harrington EO and Rounds S. Transforming growth factor- $\beta$ 1 (TGF- $\beta$ 1) enhances human lung endothelial monolayer permeability. *American Thoracic Society 2004 International Conference*, May 21-26, 2004, Orlando, Florida. Poster presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 169 (7): A415, 2004.

### 2005

- Lu Q**, Newton J, Harrington EO and Rounds S. Alterations in glucose regulated protein 94 (GRP94) upon isoprenylcysteine carboxyl methyltransferase (ICMT) inhibition. *American Thoracic Society 2005 International Conference*, May 20-25, 2005, San Diego, CA. Poster discussion by **Lu Q**. Published in *Proceedings of the American Thoracic Society*, 2: A608, 2005.
- Lu Q**, Harrington EO and Rounds S. RhoA GTPase and p38 MAPK regulates TGF- $\beta$ 1-induced lung endothelial barrier dysfunction. *American Thoracic Society 2005 International Conference*, May 20-25, 2005, San Diego, CA. Poster presentation by **Lu Q**. Published in *Proceedings of the American Thoracic Society*, 2: A753, 2005.

### 2006

- Jankowich M, **Lu Q**, Newton J, Harrington EO, and Rounds S. Isoprenylcysteine-O-carboxyl methyltransferase (ICMT) inhibition alters components of the unfolded protein response (UPR). *American Thoracic Society 2006 International Conference*, May 19-24, 2006, San Diego, CA. Poster presentation by Jankowich M. Published in *Proceedings of the American Thoracic Society*, 3: A685, 2006.
- Lu Q**, Harrington EO, Jackson HM, Kim T, and Rounds S. Transcriptional regulation of transforming growth factor (TGF)- $\beta$ 1-increased endothelial permeability. *American Thoracic Society 2006 International Conference*, May 19-24, 2006, San Diego, CA. Oral presentation by **Lu Q**. Published in *Proceedings of the American Thoracic Society*, 3: A479, 2006.

### 2007

- Lu Q**, Yang A, Harrington EO, and Rounds S. The distinct effects of transforming growth factor- $\beta$ 1 on pulmonary vascular endothelial cell apoptosis. *American Thoracic Society 2007 International Conference*, May 18-23, 2007, San Francisco, CA. Poster Discussion by **Lu Q**. Published in *Proceedings of the American Thoracic Society*, 4: A530, 2007.
- Harrington EO, Newton J, **Lu Q**, and Rounds S. RhoA GTPase protects against modulation of the unfolded protein response (UPR) protein GRP94 upon inhibition of isoprenylcysteine-O-carboxylmethyltransferase (ICMT). *American Thoracic Society 2007 International Conference*, May 18-23, 2007, San Francisco, CA. Oral presentation by **Lu Q**. Published in *Proceedings of the American Thoracic Society*, 4: A28, 2007.
- Lu Q**, Harrington EO, and Rounds S. The effects of transforming growth factor- $\beta$ 1 on pulmonary vascular endothelial cell apoptosis. *The FASEB Summer Research Conference: TGF-beta Superfamily: Signaling & Development*; July 14-19, 2007, Tucson, Arizona. Poster presentation by **Lu Q**.

### 2008

- Lu Q**, Harrington EO, Travers C, and Rounds S. Heterogenic response of pulmonary endothelial cells to TGF- $\beta$ 1. *American Thoracic Society 2008 International Conference*, May 16-21, 2008, Toronto, Canada. Poster presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 177: A177, 2008.
- Lu Q**, Harrington EO, Yang A, Kim T, Rounds S. TGF- $\beta$ 1-induced increase in endothelial monolayer permeability signals through CREB. *American Thoracic Society 2008 International Conference*, May 16-21, 2008, Toronto, Canada. Poster presentation by **Lu Q**. Published in *American Journal of*

*Respiratory and Critical Care Medicine* 177: A176, 2008.

20. **Lu Q**, Harrington EO, Newton J, Casserly B, Warburton R, and Rounds S. Receptor characterization of adenosine-mediated protection against pulmonary edema. *American Thoracic Society 2008 International Conference*, May 16-21, 2008, Toronto, Canada. Oral presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 177: A236, 2008.
21. Jankowich M, **Lu Q**, Newton J, Harrington EO, and Rounds S. Inhibition of prenylation alters endoplasmic reticulum (ER) chaperones during endothelial cell (EC) apoptosis. *American Thoracic Society 2008 International Conference*, May 16-21, 2008, Toronto, Canada. Poster discussion by Jankowich M. Published in *American Journal of Respiratory and Critical Care Medicine* 177: A847, 2008.
22. **Lu Q**, EO Harrington, C Travers, and S Rounds, "HETEROGENIC APOPTOTIC RESPONSE OF PULMONARY ENDOTHELIAL CELLS TO TRANSFORMING GROWTH FACTOR (TGF)- $\beta$ 1", Rhode Island Research Alliance Symposium, June 3<sup>rd</sup>, 2008. **Lu Q. won New Investigator Award.**

## 2009

23. **Lu Q.**, Radin, G., Newton, J., and Rounds, S. Pentostatin enhances endothelial baseline barrier function through Rac-1 activation. *American Thoracic Society 2009 International Conference*, May 15-20, 2009, San Diego, CA. Oral presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 179: A6117, 2009.
24. **Lu Q**, Mazer, J, Choudhary, G, Harrington, EO, and Rounds R. Imbalance of TGF- $\beta$ 1 signaling promotes pulmonary microvascular endothelial cell proliferation: implications for formation of plexiform lesions in PAH. *American Thoracic Society 2009 International Conference*, May 15-20, 2009, San Diego, CA. Poster presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 179: A1833, 2009.

## 2010

25. **Lu Q**, Newton J, Kang M, Lee C.G, Elias J.A, Harrington EO, and Rounds S. Cigarette smoke causes lung vascular endothelial cell apoptosis and alterations of TGF- $\beta$ 1 signaling. *American Thoracic Society 2010 International Conference*, May 14-19, 2010, New Orleans, Louisiana. Published in *American Journal of Respiratory and Critical Care Medicine* 181; 2010: A3448.
26. **Lu Q**, Newton J, Gabino-Miranda G, Ortiz M, Harrington EO, and Rounds S. Cigarette smoke extract increases lung endothelial permeability through oxidative stress-mediated alterations of small GTPases. *American Thoracic Society 2010 International Conference*, May 14-19, 2010, New Orleans, Louisiana. Published in *American Journal of Respiratory and Critical Care Medicine* 181; 2010: A3427.
27. **Lu Q**, Newton J, Ortiz M, Kang M, Lee C.G, Elias J.A, Harrington EO, and Rounds S. Cigarette smoke causes lung vascular endothelial cell apoptosis and activation of unfolded protein response and autophagy. *American Thoracic Society 2010 International Conference*, May 14-19, 2010, New Orleans, Louisiana. Published in *American Journal of Respiratory and Critical Care Medicine* 181; 2010: A3449.
28. Klinger JR, **Lu Q**, Tsai A-W, Harrington EO, Natriuretic peptide receptor-A mediates ANP inhibition of thrombin-induced barrier dysfunction in pulmonary vascular endothelial cells. *American Thoracic Society 2010 International Conference*, May 14-19, 2010, New Orleans, Louisiana. Published in *American Journal of Respiratory and Critical Care Medicine* 181; 2010:3422.

## 2011

29. **Lu Q**, Newton J, Blackburn M, and Rounds S. Prolonged adenosine exposure increases lung endothelial permeability via Rac1-mediated oxidative stress. *American Thoracic Society 2011 International Conference*, May 13-18, Denver, Colorado. Poster presentation by **Lu Q**. Published in *American Journal of Respiratory and Critical Care Medicine* 183, 2011: A1978
30. **Lu Q**, Newton J, Sakhatskyy P, Al-Qadi MO, Grinnell K, Ortiz M, Harrington EO, Rounds S. Cigarette smoke causes lung endothelial barrier dysfunction and apoptosis through oxidative stress-mediated loss of FAK and RhoA activities. *American Thoracic Society 2011 International Conference*, May 13-18, Denver, Colorado. Published in *American Journal of Respiratory and Critical Care Medicine* 183, 2011: A1956



31. **Lu Q**, Newton J, Harrington EO, Rounds S. Adenosine enhances endothelial barrier function via alteration of small GTPases. *American Thoracic Society 2011 International Conference*, May 13-18, Denver, Colorado. Published in *American Journal of Respiratory and Critical Care Medicine* 183, 2011: A1949

## 2012

32. **Lu Q**, Sakhatskyy P, Newton J, Rounds S. Cigarette smoke increases susceptibility to lung edema: Implication of RhoA and FAK-mediated disassembly of endothelial cytoskeleton and cell contacts. *Experimental Biology meeting*, April 21-25, 2012, San Diego, CA. Published in *FASEB Journal*. 2012; 26:1063
33. Sakhatskyy P, Newton J, Vang A, Choudhary G, Rounds S, **Lu Q**. Apoptosis potential is associated with susceptibility to cigarette smoke-induced emphysema. *American Thoracic Society 2012 International Conference*, May 18-23, 2012, San Francisco, CA. Published in *American Journal of Respiratory and Critical Care Medicine* 185, 2012: A4825
34. Sakhatskyy P, El-Bizri R, Alliota J, Rounds S, **Lu Q**. Circulating microparticles as an early marker of cigarette smoke injury in a mouse model. *American Thoracic Society 2012 International Conference*, May 18-23, 2012, San Francisco, CA. Published in *American Journal of Respiratory and Critical Care Medicine* 185, 2012: A6884
35. Choudhary G, Sakhatskyy P, **Lu Q**, Aliotta J, Rounds S. Exposure to cigarette smoke causes RV dysfunction. Aspen Lung Conference, May 2012, Aspen, Colorado.

## 2013

36. **Lu, Q.**, Sakhatskyy, P., Newton, J., Rivera, S., Xi, M., Rounds, S., 2013. "Cigarette Smoke Increases Endothelial Permeability And Primes The Lungs For Edema Via Cytoplasmic Histone Deacetylase (hdac) 6-Mediated Protein Deacetylation". *American Thoracic Society 2013 International Conference*, Philadelphia, PA, May 17-22. Published in *American Journal of Respiratory and Critical Care Medicine* 187, 2013: A1222.
37. G.A. Gabino Miranda, P. Sakhatskyy, J. Newton, S. Rounds, **Q. Lu**. Cigarette Smoke-Induced Lung Endothelial Cell Apoptosis Is Associated With Development Of Emphysema In Mice. *American Thoracic Society 2013 International Conference*, Philadelphia, PA, May 17-22, 2013. Published in *American Journal of Respiratory and Critical Care Medicine* 187, 2013: A6084.
38. **Lu Q**, Newton J, Shamirian P, Hsiao V, Sakhatskyy P, Curren S, Blackburn M, Rounds S, Sustained elevated adenosine causes lung endothelial apoptosis and emphysema via nucleoside transporter-facilitated mitochondrial defects. *Experimental Biological meeting*, Boston, MA, April 20-24, 2013. Published in *FASEB Journal*, 2013 27:914.
39. Vang A, Li A, Sakhatskyy P, **Lu Q**, Rounds S, Choudhary G. Cigarette smoke causes RV dysfunction and fibrosis. *American Thoracic Society 2013 International Conference*, Philadelphia, PA, May 17-22, 2013. Published in *American Journal of Respiratory and Critical Care Medicine* 187, 2013: A3975.

## 2014

40. **Lu Q**, Basak R, Newton J, Rounds S. Cigarette smoke increases lung vascular endothelial permeability by acrolein. *American Thoracic Society 2014 International Conference*, San Diego, CA; May 17-22, 2014.
41. O'Connell KA, Vang A, Sakhatskyy P, **Lu Q**, Rounds S, Choudhary G. Cigarette smoke causes RV dysfunction and cardiac fibroblast proliferation. *Experimental Biological meeting*, San Diego, CA; April 26-30, 2014.

## 2015

42. Diana Borgas, Pavlo Sakhatskyy, Julie Newton, Eboni Chambers, Mandy Xi, Stephanie Rivera, Sharon Rounds, and **Lu Q**, Histone Deacetylase 6 Mediates Cigarette Smoke-Induced Increase in Lung Endothelial Permeability and Susceptibility to Acute Lung Injury. *Experimental Biological meeting*, Boston, MA, March 28-April 1, 2015. Oral presentation. Diana received travel award for this abstract.
43. Eboni Chambers, Junsuk Ko, Diana Borgas, Julie Newton, Sharon Rounds, **Qing Lu**, Sustained Adenosine Caused Endothelial Mitochondrial Dysfunction: Implications for Cigarette Smoke-Induced Increased Susceptibility to Acute Lung Injury. *Experimental Biological meeting*, Boston, MA, March 28-April 1, 2015. Poster presentation

44. **Lu Q**, Thilo Lange, Diana Borgas, Julie Newton, Pavlo Sakhatskyy, Gaurav Choudhary, Raj Basak, Sharon Rounds. Acrolein Mediates Cigarette Smoke-Induced Increase in Lung Endothelial Cell Permeability and Susceptibility to Acute Lung Injury. American Thoracic Society 2013 International Conference, Denver, Colorado, May 15-20, 2015. Poster presentation
45. Diana Borgas, Julie Newton, Junsuk Ko, Eboni Chambers, Stephanie Rivera, Sharon Rounds, and **Qing Lu**. Histone Deacetylase 6 Mediated Cigarette Smoke-Induced Lung Endothelial Barrier Dysfunction. 2015 RI NIH IDeA Symposium, April 2, 2015, Alpert medical School of Brown University, Poster presentation

## 2016

46. Eboni Chambers, Diana Borgas, Michael R. Blackburn, Sharon Rounds, **Qing Lu**. Inhibition of Equilibrative Nucleoside Transporters Attenuated Pseudomonas Aeruginosa-Induced Acute Lung Injury. Experimental Biological 2016 meeting.
47. Eboni Chambers, Junsuk Ko, Michael R. Blackburn, Sharon Rounds, and **Qing Lu**. Equilibrative Nucleoside Transporter 1 Mediates Adenosine-Induced Endothelial Mitochondrial Dysfunction and Contributes to Cigarette Smoke Priming for Acute Lung Injury. American Thoracic Society 2016 International Conference.
48. Pyoung Oh Yoon, Jin Wook Park, Chang-Min Lee, Sung Hwan Kim, Joo-Sung Yang, Han-Oh Park, Kyuhong Lee, **Qing Lu**, Jack A. Elias, Chun Geun Lee. Self-assembled micelle RNAi for effective and safe targeting of dysregulated genes in pulmonary fibrosis. American Thoracic Society 2016 International Conference.
49. Alexander Vang, Havovi Chichger, Ayed Allawzi, Kelly O'Connell, Pavlo Sakhatskyy, **Qing Lu**, Sharon Rounds, Gaurav Choudhary, Mechanism of RV dysfunction associated with Cigarette Smoke Exposure. American Thoracic Society 2016 International Conference.
50. Havovi Chichger, Alexander Vang, Gaurav Choudhary, **Qing Lu**, Elizabeth O. Harrington. Endosomal proteins p18 and Rab4 are differentially regulated in pulmonary hypertension and COPD/emphysema. American Thoracic Society 2016 International Conference.

## 2017

51. **Qing Lu**, Thilo Lange, Julie Newton, Diana Borgas, Gaurav Choudary, Saira Imran, Rajshekhar Basak, Mahogany Oldham, Sharon Rounds. Acrolein causes aldehyde-mediated lung injury by interfering with mitochondrial respiration of endothelial cells. American Thoracic Society 2017 International Conference.
52. Pavlo Sakhatskyy, Zhengke Wang, Diana Borgas, Joanne Lomas-Neira, Yaping Chen, Alfred Ayala, Sharon Rounds, and **Qing Lu**. Double-Hit Mouse Model of Cigarette Smoke Priming for Acute Lung Injury. American Thoracic Society 2017 International Conference.
53. Eboni Chambers, Abigail Healy, Alan Morrison, Sharon Rounds, **Qing Lu**. The Effect of Equilibrative Nucleoside Transporter 1 on Pseudomonas Aeruginosa-Induced Acute Lung Injury. Experimental Biological 2017 International Conference.

## 2018

54. Eboni Chambers, Alexis White, Alexander Vang, Zhengke Wang, Ting-Ting Mills, Gaurav Choudhary, Sharon Rounds, Alfred Ayala, Michael Blackburn, and **Qing Lu**. Inhibition of equilibrative nucleoside transporters protect against *pseudomonas aeruginosa*-induced acute respiratory distress syndrome. American Thoracic Society 2017 International Conference.

## INVITED ORAL PRESENTATIONS

### A) National & International Presentations:

1. Society for the Study of Reproduction (SSR) Annual International Conference. Mini-symposium, "Localization of phosphorylated-MAPK and PP2A during mouse oocyte meiosis and their roles in microtubule polymerization". July 28, 2000, Madison, Wisconsin.
2. American Thoracic Society (ATS) Annual International Conference. Mini-symposium, "Alterations in glucose regulated protein 94 upon isoprenylcysteine carboxyl methyltransferase inhibition". May 24, 2005, San Diego, CA.
3. American Thoracic Society (ATS) Annual International Conference. Mini-symposium, "Transcriptional regulation of transforming growth factor- $\beta$ 1-increased endothelial permeability." May

21, 2006, San Diego, CA.

4. American Thoracic Society (ATS) Annual International Conference. Mini-symposium, "RhoA GTPase protects against modulation of the unfolded protein response upon inhibition of isoprenylcysteine-O-carboxylmethyltransferase". May 20, 2007, San Francisco, CA.
5. American Thoracic Society (ATS) Annual International Conference. Mini-symposium, "Receptor characterization of adenosine-mediated protection against pulmonary edema. May 18, 2008, Toronto, Canada.
6. American Thoracic Society (ATS) Annual International Conference. Mini-symposium, "Pentostatin enhances endothelial baseline barrier function through Rac-1 activation". May 18, 2009, San Diego, CA.
7. Institute of Zoology, the Chinese Academy of Science. Invited Speaker, "Cigarette smoke: COPD and lung endothelial cell apoptosis". June 24, 2010, Beijing, China.
8. National Institute of Biological Science. Invited Speaker, "Cigarette smoke: COPD and lung endothelial cell apoptosis". June 24, 2010, Beijing, China.
9. Hua-nan Normal University. Invited Speaker, "Cigarette smoke: COPD and lung endothelial cell apoptosis". July 13, 2010, Guangzhou, China.
10. Tufts University School of Medicine. Invited speaker, "Adenosine and Lung Endothelial Injury". May 1, 2011, Boston, MA.
11. American Thoracic Society (ATS) Annual International Conference. Poster Discussion, "Cigarette smoke increases endothelial permeability and primes the lungs for edema via cytoplasmic histone deacetylase (HDAC) 6-mediated protein deacetylation". May 20, 2013 Philadelphia, PA.
12. Division of Lung Disease, NHLBI. Invited Speaker, "Cigarette Smoke and Lung Vascular Injury". August 19, 2013, Bethesda, Maryland.
13. Chinese-American Thoracic Society (ATS) Annual Conference. Mini-symposium, "Sustained Adenosine Causes Endothelial Barrier Dysfunction and Apoptosis". May 19, 2014, San Diego, CA.
14. University of Texas Houston Medical School, Department of Biochemistry and Molecular Biology. Invited Speaker, "Adenosine, Cigarette Smoke and Acute Lung Injury". March 30, 2016, Houston, TX.
15. National IDeA Symposium of Biomedical Research Excellence. "HDAC6 contributed to cigarette smoke priming for development of acute lung injury". June 26-28, 2016, Washington D. C.
16. Albany Medical College. Invited Speaker, "Cigarette Smoke and Acute Lung Injury". July 15. 2016, Albany, NY.
17. Shanghai Respiratory Institute/Fudan University. Invited Speaker, "Cigarette Smoke and Acute Lung Injury", July 13, 2017, Shanghai, China
18. Nanjing Normal University. Invited Speaker, "Cigarette Smoke and Acute Lung Injury", July 10, 2017, Nanjing, China.
19. Nanjing Agriculture University. Invited Speaker, "Cigarette Smoke and Acute Lung Injury", July 10, 2017, Nanjing, China.

#### **B) Regional Presentations:**

1. Vascular Research Lab Research Seminar. "Acetylation of CREB is involved in repression of related gene expression". Providence VA Medical Center, November 16, 2001.
2. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Carboxy methylation of Rho GTPases regulates pulmonary endothelial monolayer permeability". RI Hospital, September 30, 2002.
3. Brown University Vascular Biological Research Group Research Seminar. "TGF- $\beta$ 1 and endothelial barrier function". Providence VA Medical Center, November 17, 2003.
4. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Effect of TGF- $\beta$ 1 in endothelial monolayer permeability". RI hospital, February 2, 2004.
5. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "RhoA GTPase and p38 MAPK regulates TGF- $\beta$ 1-induced lung endothelial barrier dysfunction". RI Hospital, January 10, 2005.

6. Brown University Division of Surgery Seminar. "Signaling Mechanism(s) underlying TGF- $\beta$ 1-induced lung endothelial barrier dysfunction". Department of Surgery, RI hospital, August 22, 2006.
7. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Signaling mechanism(s) underlying TGF- $\beta$ 1-induced lung endothelial barrier dysfunction". RI Hospital, October 16, 2006.
8. Brown University Vascular Data Club Meeting, "Transforming growth factor-beta1 and endothelial cell function", February 14, 2007.
9. Providence VA Medical Center, Research Week, Keynote speaker, "Transforming Growth Factor- $\beta$ 1 regulation of emphysema and lung edema", May 10, 2007.
10. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Heterogeneity of lung vascular endothelial cells in response to TGF- $\beta$ 1 signaling". RI hospital, October 1, 2007.
11. Brown Cardiovascular Research Center, Basic Methodology Seminar. "Cell death and associated pulmonary diseases". CRC Core Building, October 6, 2008.
12. Brown Cardiovascular Research Center, Basic Methodology Seminar. "Apoptosis and cardio-pulmonary diseases". CRC Core Building, May 10, 2010.
13. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Sustained adenosine exposure and lung endothelial barrier dysfunction", RI hospital, Nov 18, 2011.
14. Bristol Community College, "How Cigarette Smoke Injury Lungs?" Feb 8, 2012.
15. East Nazarene College, "Does Cigarette Smoke Eat Our Lungs and Weaken Our Heart?", Feb 14, 2012.
16. Brown Cardiovascular Research Center, Basic Methodology Seminar, "Apoptosis and cardiovascular diseases", CRC Core Building, July 9, 2012.
17. Roger Williams Medical Center, "Adenosine and Lung Endothelial Injury". February 22, 2012.
18. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Adenosine and Lung Endothelial Injury". October 15, 2012.
19. Biol 0800 (Principles of Physiology), invited lecture, "Acid and base Regulation", Nov. 26, 2012
20. Rhode Island College, "Adenosine, Cigarette smoke, and Lung Endothelial Injury". Feb, 21, 2013
21. Brown University Office of Graduate & Postdoctoral Studies Seminar, "Navigating the Publication Process: A focus on online publishing". March 13, 2013
22. Providence VA Medical Center, Research Week, Keynote speaker, "Cigarette Smoke and Lung & Heart Injury", May 15, 2013.
23. CPVB COBRE bi-weekly meeting. "Role of Adenosine in Cigarette Smoke-Induced Lung Endothelial Injury". Building 32, Providence VA Medical Center, January 31, 2014.
24. CPVB External Advisory Committee meeting. "Role of Adenosine in Cigarette Smoke-Induced Lung Endothelial Injury". March, 3, 2014.
25. CPVB COBRE bi-weekly meeting. "Update and Future Plan of Project 1". Building 32, Providence VA Medical Center, June 20, 2014.
26. Brown BIRD meeting. "Mechanisms of Cigarette Smoke Priming Individuals for Acute Lung Injury". November 20, 2014.
27. CPVB External Advisory Committee Meeting, "Adenosine and Lung Endothelial Cell Injury", November 21, 2014.
28. Brown University Division of Surgery Seminar. "Mechanisms of Cigarette Smoke Priming Individuals for Acute Lung Injury". RI hospital, December 9, 2014.
29. CPVB COBRE bi-weekly meeting. "The role of histone deacetylase 6 in cigarette smoke-induced endothelial barrier dysfunction and increased susceptibility to acute lung injury". Building 32, Providence VA Medical Center, March 13, 2015.
30. CPVB External Advisory Committee Meeting. "Histone Deacetylase (HDAC) 6 and Cigarette Smoke Priming for Acute Lung Injury". November 3, 2015.
31. Vascular Research Lab Bi-weekly Lab Meeting. "Histone Deacetylase (HDAC) 6 and Cigarette Smoke Priming for Acute Lung Injury". January 22, 2016.
32. CPVB COBRE Bi-weekly Meeting, "Strain-Dependent Susceptibility to Cigarette Smoke-primed Acute Lung Injury". Feb. 12, 2016.

33. Rhode Island NIH IDeA Symposium. "Histone Deacetylase (HDAC) 6 and Cigarette Smoke Priming for Acute Lung Injury". March 17, 2016.
34. CPVB External Advisory Committee Meeting. "Histone Deacetylase (HDAC) 6 and Cigarette Smoke Priming for Acute Lung Injury". October 26, 2016.
35. Brown BIRD meeting. "Human Health Impacts of Biomass Combustion". February 6, 2017.
36. CPVB COBRE bi-weekly meeting. "Adenosine Signaling and Pseudomonas-Induced Acute Lung Injury". February 10, 2017.
37. Brown University Orthopedic Research Seminar. "Adenosine and Cigarette Smoke in Acute Lung Injury". RI hospital, April 26, 2017.
38. Brown University Pulmonary, Critical Care & Sleep Disorder Medicine Research Seminar. "Cigarette Smoke: an endothelial cell toxin and priming factor for ARDS". RI hospital, November 6, 2017.

## **GRANTS**

### **A) Current Research Grants:**

1. R01 HL130230 (PI: Qing Lu) 7/1/2016-6/30/2020 6.96 calendar  
NIH/ NHLBI Annual Direct Cost: \$250,000  
"HDAC6 regulates cigarette smoke-induced endothelial barrier dysfunction and lung injury"  
The goal of this application is to identify mechanisms by which cigarette smoke impairs pulmonary endothelial barrier function and increases vulnerability to acute lung injury post bacterial infection by focusing on the role of HDAC6 and mitochondrial dysfunction.  
Role: **Principal Investigator**
2. P20GM103652 (Project 1 PI: Qing Lu) 9/20/2013-5/31/2017 3 calendar  
NIH/ NIGMS Project 1 Annual Direct Cost: \$220,500  
Project 1 Title: "Adenosine and Lung Endothelial Cell Injury"  
Goal of Project 1 is to understand role of sustained elevated adenosine in lung endothelial cell injury.  
Role: **Principal Investigator of Project 1**
3. BX002622 (PI: Sharon Rounds) 4/1/2015-3/31/2019 1.8 calendar  
VA BLR&D Merit Review Total Direct Cost: \$650,000  
"Mechanism of Cigarette Smoke-Induced Lung Injury"  
The goal of this project is to ascertain the role and mechanisms of cigarette smoke-induced emphysema, emphasizing on acrolein-induced lung injury.  
Role: **Co-Investigator**
4. Agency: Institute at Brown for Environment and Society (IBES), Brown University  
ID: IBES Project Development Grant (PI: Agnes Kane)  
Title: "Mechanisms of Biomass Smoke-Induced Lung and Vascular Injury"  
Period: 1/1/2016-12/31/2017  
Total Direct Cost: \$40,000  
The goal of this internal seed funding is to support collaboration among faculty members at the Alpert Medical School, School of Engineering and the Department of Earth, Environmental and Planetary Sciences to develop biomass smoke system, to characterize the biomass smoke aerosols and to test effects of biomass smoke on lung and vascular injury.  
Role: **Co-Investigator** (\$20,000 for Lu's technician's effort)

### **B) Completed Research Grants:**

1. Agency: Francis Family Foundation  
ID: Parker B. Francis Fellowship (PI: Qing Lu)  
Title: "TGF- $\beta$ 1 and Endothelial Monolayer Permeability"  
Period: 7/1/2004-6/30/2007  
Direct Cost: \$126,000  
Role: **Principal Investigator**
2. Agency: American Thoracic Society/Pulmonary Hypertension Association

- ID: PH-05-015 (PI: Qing Lu)  
 Title: "TGF- $\beta$ 1 and Pulmonary Artery Hypertension"  
 Period: 1/1/2008-12/31/2010  
 Direct Cost: \$100,000  
 Role: **Principal Investigator**
3. Agency: American Lung Association  
 ID: RG-1140-N (PI: Qing Lu)  
 Title: "Mechanism of TGF- $\beta$ 1 Regulation of Endothelial Monolayer Permeability"  
 Period: 7/1/2004-6/30/2006  
 Direct Cost: \$70,000  
 Role: **Principal Investigator**
4. Agency: The Rhode Island Medical Foundation  
 ID: Medical Research Grant (PI: Qing Lu)  
 Title: "TGF- $\beta$ 1 and Endothelial Permeability"  
 Period: 1/1/2004-12/31/2004  
 Direct Cost: \$10,000  
 Role: **Principal Investigator**
5. Agency: NIH/ NHLBI  
 ID: HL88328L (PI: James Klinger)  
 Title: "Natriuretic Peptides in Pulmonary Endothelial Cell Barrier Function"  
 Period: 6/1/2007-5/31/2012  
 Annual direct cost: \$250,000  
 Role: **Co-Investigator**
6. Agency: NIH/ NHLBI  
 ID: HL64936 (PI: Sharon Rounds)  
 Title: "Small GTPases and Lung Endothelial Apoptosis"  
 Period: 4/1/2006-3/31/2010  
 Annual direct cost: \$250,000  
 Role: **Co-Investigator**
7. Agency: VA BLR&D  
 ID: VA Merit Review (PI: Sharon Rounds)  
 Title: "RhoA GTPase Methylation and Vascular Permeability"  
 Period: 4/1/2005-3/31/2015  
 Annual direct cost: \$150,000  
 Role: **Co-Investigator**
8. Agency: VA BLR&D  
 ID: VA Merit Review (PI: Gaurav Choudhary)  
 Title: "Endothelial BKCa Channels and Hypoxic Pulmonary EC Dysfunction"  
 Period: 4/1/2011-3/31/2015  
 Annual direct cost: \$150,000  
 Role: **Collaborator**
9. Agency: Alpert Medical School of Brown University  
 ID: Deans Emerging Areas of New Science award (PIs: David Rand, Sharon Rounds)  
 Title: "Cigarette Smoke Effects on Mitochondria—From Flies to Lungs"  
 Period: 7/1/2014-12/30/2015  
 Annual direct costs: \$80,000  
 Role: **Co-Investigator**

### C) VA Shared Equipment Evaluation Program (ShEEP) Grants:

2007 BioTek Synergy 2 Luminescence and Fluorescence Microplate Readers (PI: Qing Lu)

- Total cost: \$50,000  
Role: **Principal Investigator**
- 2010 Scireq FlexiVent FX Complete System for measuring rodent lung mechanics (PI: Qing Lu)  
Total cost: \$50,000  
Role: **Principal Investigator**
- 2013 Teague TE-10 Mouse Smoke Exposure Machine (PI: Qing Lu)  
Total cost: \$50,000  
Role: **Principal Investigator**
- 2014 Teague TE-10 Rat Smoke Exposure Machine (PI: Qing Lu)  
Total cost: \$65,000  
Role: **Principal Investigator**
- 2014 Seahorse BI XFe96 Analyzer (PI: Qing Lu)  
Total cost: \$200,000  
Role: **Principal Investigator**

#### D) Mentor-Trainee (undergraduate student) Collaborative Research Grants:

1. Agency: Brown University's Program in Liberal Medical Education (PLME)  
ID: Summer Research Assistantship (SRA) Award  
Title: "TGF- $\beta$ 1 regulation of RhoA activation and endothelial barrier dysfunction"  
Period: 6/1-8/8/2006  
Direct cost: \$3000  
Role: **Mentor** for Angela Yang, PLME student of Brown University
2. Agency: Brown University Office of the Dean of the College  
ID: Undergraduate Teaching and Research Assistantship (UTRA) Award  
Title: "Prolonged adenosine exposure and lung endothelial apoptosis"  
Period: 6/1-8/8/2011  
Direct cost: \$3000  
Role: **Co-mentor** for Paul Shamirianl, undergrad, Sc.B, Class of 2012 of Brown University
3. Agency: Brown University's Program in Liberal Medical Education (PLME)  
ID: Summer Research Assistantship (SRA) Award  
Title: "Prolonged adenosine exposure and lung endothelial barrier dysfunction"  
Period: 6/1-8/8/2011  
Direct cost: \$3000  
Role: **Mentor** for Vivian Hsiao, PLME student of Brown University
4. Agency: Brown University's Program in Liberal Medical Education (PLME)  
ID: Summer Research Assistantship (SRA) Award  
Title: "Effect of cigarette smoke on lung endothelial permeability"  
Period: 6/1-8/8/2012  
Direct cost: \$3000  
Role: **Mentor** for Mandy Xi, PLME student of Brown University
5. Agency: Brown University Office of the Dean of the College  
ID: Undergraduate Teaching and Research Assistantship (UTRA) Award  
Title: "Mechanism of cigarette smoke-induced lung endothelial apoptosis"  
Period: 6/1-8/8/2014  
Direct cost: \$3500  
Role: **Mentor** for Junsuk Ko, undergrad, Sc.B, Class of 2015 of Brown University
6. Agency: Korean Byucksan Education and Art Foundation  
ID: Academic Merit-based Scholarship

- Title: "Mechanism of cigarette smoke-induced lung endothelial apoptosis"  
 Period: 1/1-12/31/2014  
 Direct cost: 5,000,000 Korean Won (\$ 4,650)  
 Role: **Mentor** for Junsuk Ko, undergrad, Sc.B, Class of 2015 of Brown University
7. Agency: Brown University's Program in Liberal Medical Education (PLME)  
 ID: Summer Research Assistantship (SRA) Award  
 Title: "Effects of Cigarette Smoke on Mitochondrial Fission and mtDAMPs in Lung Endothelial Cells"  
 Period: 6/1-8/8/2015  
 Direct cost: \$3000  
 Role: **Mentor** for Kevin Tang, PLME student of Brown University
8. Agency: Brown University Office of the Dean of the College  
 ID: UTRA Award  
 Title: "Effects of Cigarette Smoke on mtDAMPs in Lung Endothelial Cells"  
 Period: 6/1-8/8/2016  
 Direct cost: \$3500  
 Role: **Mentor** for Elaine Hsu, undergrad of Brown University

**TEACHING ROLES:****A) Course Teaching:**

- 2013 Bio 335 (Human Physiology), Rhode Island College, Spring & Fall, 25 students per class  
 2013 BI 101 (Principal of Biology), East Nazarene College, Fall semester, 45 students per class  
 2014 Biology 1960 (Dir Research/Independent Study), Brown University, Spring and Fall  
 2015 Biology 1960 (Dir Research/Independent Study), Brown University, Spring  
 2017 BIOL 1950 (Dir Research/Independent Study), Brown University, Fall semester (9/6/2017-12/21/2017), student: Trung V. Ho, Biochemistry & Molecular Biol.

**B) Guest Lectures:**

- 2012 Providence College, Introductory Biology: "*A Tour of the Cell*", Sept. 21, 2012  
 2012 Brown University, Biol 0800 (Physiology): "*Acid and Base Regulation*", Oct. 22, 2012  
 2013 Brown University, Office of Graduate & Postdoctoral Studies: "*Navigating the Publication Process: A Focus on Online Publishing*", March 13, 2013, J Walter Wilson, Room 403.  
 2013 Brown University, Office of Graduate & Postdoctoral Studies: "*Introductory Training in the Responsible Conduct in Research/ Mentorship*", Sept. 17, 2013, MACMILLAN, Room 115.

**C) Research Mentoring (underlined trainees shared co-authorship with Lu Q.)****❖ Sponsoring Postdoctoral/ Medical Fellows:**

- 2010-12 Pavlo Sakhatsky, M.D. (T32 Pulmonary fellow)  
 2012-13 Gustavo Gabino Miranda, M.D. (Pulmonary fellow)  
 2014-15 Diana Borgas, Ph.D (postdoc)  
 2015-present Zhengke Wang, Ph.D (postdoc)  
 2016 Saira Imran, MD (Pulmonary fellow)  
 2017-present Xing Wang, Ms. MD (exchange fellow)

**❖ Mentoring Graduate Students for Ph.D Thesis:**

- 2005-07 Thesis Committee Member of ZhiZhan Gu, Ph.D. MPPB graduate program, Brown University  
 2013-present Advisor for Eboni Chambers, Ph.D. Pathobiology graduate program, Brown University. Expecting graduation: Spring 2018



2017-present Thesis Committee Member of Bedia Akosman, Ph.D. Pathobiology graduate program, Brown University, Expecting graduation 2021

❖ **Mentoring Research Rotations of Brown Graduate and Medical Students:**

2003 Megan Garber (Ph.D student)  
 2004 Zhizhan Gu (Ph.D. student)  
 2008 Gregory Radin (MD student)  
 2009 Gustavo Gabino Miranda (MD, Pulmonary fellow)  
 2010 Sean Curran (MD/PhD student)

❖ **Mentoring Directed Research (BIOL 1960) of Brown undergraduate students:**

2010-11 Joy Choi (co-advisor)  
 2013-15 Junsuk Ko (Thesis Advisor), Honors in the Biological Sciences  
 2017-18 Jeffrey Tan (2<sup>nd</sup> Reader), Honors in the Biological Sciences  
 2017-18 Trung Ho (Thesis Advisor), Honors in Chemistry

❖ **Advisor for Brown Undergraduate Student Summer Research:**

2005 Thomas Kim  
 2006 Angela Yang (SRA award)  
 2007 Christopher Travers  
 2008 Bhuvic Patel  
 2011 Paul Shamirian (UTRA Award)  
 2011 Vivian Hsiao (SRA award)  
 2012 Mandy Xi (SRA award)  
 2014 Junsuk Ko, (UTRA Award, Academic Merit-based Scholarship)  
 2015 Keven Tang (SRA award)  
 2016 Elaine Hsu (UTRA award)

❖ **Adviser for Leadership Alliance Undergraduate Students (NHLBI R25):**

2002 Noelle Hutchins, University of North Carolina at Chapel Hill  
 2009 Melanie Ortiz, University of Puerto Rico  
 2012 Stephanie Rivera, University of Puerto Rico  
 2013 Raishekjar Basak, Macaulay Honors College CUNY  
 2014 Amaris B. Gilchrease, Claflin University  
 2015 Mahogany Oldham, Malone University, Ohio  
 2016 Dre'Von Dobson, University of North Carolina at Chapel Hill  
 2017 Alexander Weingart, University Vermont

❖ **Mentoring Junior Faculty Members:**

2017 Hongwei Yao, Ph.D, Associate Professor of Molecular Biology, Cell Biology and Biochemistry (Research), COBRE project

❖ **Faculty Trainer on Training Grants:**

1. NHLBI T32 (Koren and Rounds)  
 Title: "CardioPulmonary Research Training Program"  
 Agency: NIH/ NHLBI  
 Period of Support: 4/1/09-3/31/14  
 My role: **Faculty trainer**
2. T35 HL 094308 (Gruppuso)  
 Title: "The Alpert Medical Student Summer Research Program (AMSSRP)"  
 Agency: NIH/NHLBI  
 Period of Support: 2009-2014

**My role: Faculty trainer**

The overall objective is to train medical students who desire to be physician scientists and independent investigators in the molecular basis and pathobiology of cardiovascular, blood, and pulmonary diseases and/or the outcomes of prevention and treatment of these diseases.

## 3. NHLBI R25 (Harrington)

Title: "Short-Term Training Program to Increase Diversity in Health-Related Research"

Agency: NIH/ NHLBI

Period of Support: 4/1/07-3/31/17

**My role: Faculty trainer**

The long-range goal of this grant is to increase the numbers of students from under-represented minority and other under-represented backgrounds who enter careers in research on heart, lung, blood, or sleep disorders.