



Updated September 3rd, 2015

## Curriculum vitae:

# **ANDREAS SCHWINGSHACKL, MD, Ph.D, FAAP**

### Contact info:

University of California, Los Angeles  
Mattel Children's Hospital at UCLA  
Pediatric Critical Care  
10833 Le Conte Ave, 12-494 MDCC  
Los Angeles, CA 90095  
(310)-825-6752

**email:** aschwingshackl@gmail.com

**webpage:** <https://www.uclahealth.org/Mattel/Pediatric-Critical-Care/Pages/our-physicians.aspx>

## **PERSONAL STATEMENT:**

My training as an MD and PhD provides the ideal framework for my work as a clinician-scientist in the field of lung inflammation and repair. My current research focuses on the role of stretch-activated ion channels in the development of ventilator-induced lung injury, inflammatory mediator secretion, loss of epithelial barrier function and lung repair mechanisms. Importantly, we detected for the first time the expression of stretch-activated, 2-pore domain potassium (K2P) channels in the lung<sup>1</sup> and discovered that the K2P channel TREK-1 plays a crucial role in the development of hyperoxia- and mechanical stretch-induced lung injury using both *in vitro* and *in vivo* models of lung injury<sup>2,3</sup>. For this purpose, we created several stable, TREK-1 deficient and TREK-1 overexpressing murine and human lung epithelial cells lines. By employing molecular, genetic, electrophysiology and state-of-the-art imaging techniques, including confocal microscopy, electron microscopy and atomic force microscopy (AFM), as well as several K2P deficient mouse models, my lab has received international recognition for elucidating the role of K2P channels in hyperoxia- and mechanical stretch-induced lung epithelial injury<sup>4</sup>. Over the years, my research has been supported by institutional, national and international funding agencies, including the University of Tennessee Children's Foundation Research Institute, the NIH and the American Lung Association, the Hans and Blanca Moser Foundation and the Alberta Heritage Foundation for Medical Research. In addition, I am an ad-hoc reviewer for 9 scientific journals. Furthermore, I am currently a co-investigator for the first randomized, controlled trial studying the effects of prolonged steroid treatment on children with ARDS.

Aside from studying the molecular aspects of ventilator-induced lung injury, I serve as an attending physician in both the pediatric (PICU) and cardiothoracic (CTICU). As Associate Fellowship Program Director at the University of Tennessee and now at UCLA, I am responsible for the research component of the Critical Care fellowship program and I have assisted several

fellows in obtaining intramural funding and the successful completion of their research projects. I am currently the primary mentor for Dr. Rupal Patel, a neonatology fellow, studying the role of IL-7 containing nanoparticle delivery to lung epithelial cells in epithelial-mesenchymal transition (EMT).

## **EDUCATION:**

1990-1997	University of Innsbruck, Austria MD degree
1995-2000	Life Guard, Italian Swimming Federation (FIN)
1996-1997	Medical School Thesis at the Institute for Biomedical Aging Research, Austrian Academy of Sciences, Department of Immunology
1997	Elective program at the University of Linköping, Sweden Department of Pathology Supervisor: Prof. P. Westermark
1997	Volunteer in the Department of Neurosciences University "Tor Vergata", Rome, Italy Supervisor: Prof. P. Calabresi
1998-2001	Department of Physiology Ph.D degree University of Alberta, Edmonton, Canada Supervisors: Drs. M. Duszyk and R. Moqbel
2001-2003	Postdoctoral Fellowship University of Alberta, Edmonton, Canada Supervisor: Dr. D. Befus
2003-2006	Pediatric Residency St. Joseph's Hospital, Phoenix, Arizona
2006-2009	Pediatric Critical Care Fellowship University of California in Los Angeles (UCLA)
2007-2009	Member of the UCLA Pediatric Critical Care Transport team
2009-2014	Assistant Professor of Pediatrics and Physiology Associate Fellowship Program Director Pediatric Critical Care Medicine

University of Tennessee Health Science Center, Le Bonheur  
Children's Hospital, Memphis, TN

2015-present

Assistant Professor of Pediatrics  
Associate Fellowship Program Director  
Pediatric Critical Care Medicine  
Mattel Children's Hospital at UCLA, Los Angeles, CA

## **HOSPITAL / CLINICAL APPOINTMENTS:**

### **Attending Physician – Pediatric Critical Care:**

- Le Bonheur Children's Hospital, University of Tennessee Health Sciences Center (2009-14).
- Mattel Children's Hospital at UCLA (2015-present).

### **Attending Physician – Pediatric Cardiac Critical Care:**

- Le Bonheur Children's Hospital Heart Institute, University of Tennessee Health Sciences Center (2009-2014).
- Mattel Children's Hospital at UCLA (2015-present).

## **INSTITUTIONAL COMMITTEE MEMBERSHIPS:**

### ➤ **Scholarship Oversight Committee (SOC) Member:**

#### ○ **University of Tennessee Health Science Center, Pediatric Critical Care:**

Dr. Astrid Zepeda (2011-12), Dr. Kimberly Ingram (2011-12), Dr. Bonny Bardhan (2011-12), Dr. Fabio Savorgnan (2011-13), Dr. Rebekah Shappley (2011-13), Dr. Rajat Pareek (2011-14), Dr. Tricia Alleyne (2013-14), Dr. Catherine Taylor (2013-14), Dr. Peter Mangubat (2013-14).

#### ○ **University of Tennessee Health Science Center, Pediatric Cardiology:**

Dr. Soi-Yu Chen (2011-12), Dr. Ranjit Phillips (2011-13), Dr. Pooja Kashyap (2012-14), Dr. Jason Alexander (2013-14), Dr. Saradha Subramanian (2013-14).

#### ○ **University of Tennessee Health Science Center: Physiology and Biomedical Engineering:**

Gabriel Rapalo (2011-14).

- **Mattel Children’s Hospital at UCLA, Neonatology:**  
Rupal Patel (2015-present).
  
- **Department of Pediatrics Committee on Education,** Le Bonheur Children’s Hospital (2012-14).

**MEDICAL BOARD CERTIFICATIONS:**

- United States Medical Licensing Exam (USMLE), Step 1, 2000
- United States Medical Licensing Exam (USMLE), Step 2, 2002
- United States Medical Licensing Exam (USMLE), Step 3, 2004
- Clinical Skills Assessment (CSA), 2001
- TOEFL English proficiency exam, 2002
- Medical Council of Canada Evaluating Exam, 2002
- Medical Council of Canada Qualifying Exam Part 1, 2003
- American Board of Pediatrics Certification, 2006
- American Board of Pediatrics, Critical Care Medicine, 2011

**MEDICAL LICENSES:**

California Medical License	-active
Tennessee Medical License	-inactive (2009-2014)
Tennessee Board of Pharmacy License	-inactive (2009-2014)

**ALLIED CERTIFICATIONS:**

Advanced Cardiac Life Support (ACLS)	--current
Basic Life Support (BLS)	--current
Pediatric Advanced Life Support (PALS)	--current

## **REVIEWER AND EDITORIAL DUTIES:**

### **❖ AD-HOC PEER-REVIEWER FOR THE FOLLOWING JOURNALS AND ORGANIZATIONS:**

- 2011-present Frontiers in Pediatrics- ongoing
- 2011-1015 Le Bonheur Children's Foundation Research Institute, Internal Grant Review
- 2012-present American Journal of Physiology (AJP)
- 2012-present American Journal of Translational Research (AJTR)
- 2013-present Journal of Pediatric Critical Care Medicine (PCCM)
- 2013-present Journal of Pulmonary and Respiratory Medicine (JPRM)
- 2014-present Scientific Reports, Nature Publishing Group
- 2014-present PLoS ONE
- 2014-present European Journal of Pediatrics
- 2015-present Mediators of Inflammation

### **❖ STUDY SECTION MEMBER of the American Heart Association (AHA), Lung Study Section – Basic Science (BSc2), 2014-present.**

❖ **EDITOR** for the Frontiers Research Topic “Work-Life Balance: Essential or Ephemeral?”, (2015-present).

❖ **CO-EDITOR** for the Frontiers Research Topic “ARDS in the 21<sup>st</sup> Century: Reaching for the Horizon.” (2015-present)

❖ **ASSOCIATE EDITOR** for the online, open access Journal “Frontiers in Pediatric Critical Care”, Nature Publishing Group, 2013-present.

❖ **NIH-EARLY CAREER REVIEWER (ECR)** program at the Center for Scientific Review (CSR), National Institutes of Health (NIH), 2013-present.

## **OTHER RESEARCH ACTIVITIES:**

**Co-investigator:** “*The Role of Steroids in Pediatric ARDS*”. Single-center study at Le Bonheur Children's Hospital, 2010-ongoing.

## **STUDENTSHIPS:**

- Studentship of the “Austrian Hans & Blanca Moser Foundation”, Austria, 1997.
- Studentship of the Austrian Ministry of Sciences and Education for Elective Program at the University of Linköping, Sweden, 1997.
- Studentship of the Alberta Heritage Foundation for Medical Research (full time), Canada, 2000-2002.
- Postdoctoral Fellowship of the Alberta Heritage Foundation for Medical Research (full time), Canada, 2001-2003

## **AWARDS:**

- Representative of the University of Alberta for the Canadian Institute for Health Research (CIHR) Competition, Canada, 1999.
- Second place at the University of Alberta, Department of Physiology Research Day Competition, Canada, 1999.
- Marie Louise Imrie Research Award, Austria, 2000.
- Travel Award from the American Academy of Allergy, Asthma and Immunology for their Annual Meeting in 2000 and 2001.
- Junior Researcher Award from “HGV Suedtirol”, Italy, 2001.
- First place at the University of California in Los Angeles (UCLA) Research Day competition, 2008.
- Le Bonheur Children’s Foundation Research Institute Bea Gerber Award, 2011.
- Nominee of the University of Tennessee Health Science Center for the Pew Foundation Scholarship, 2012.
- Le Bonheur Faculty Award for “Excellence in Research”, 2013.

## **DISSERTATIONS:**

- Medical School Graduation Thesis on "*Attempts to prevent amylin-induced cytotoxicity*" at the Institute for Biomedical Aging Research, Austrian Academy of Sciences (1997)  
Supervisor: B. Grubeck-Loebenstein, MD  
Associate Professor of Medicine, Head of Immunology Unit
- PhD Thesis on "*Mechanisms of human eosinophil activation*", University of Alberta, Canada (2001)

## **INVITED SPEAKER:**

- St. Jude Children's Research Hospital - Research Seminar, 2008
- University of Kentucky, Lexington - Research Seminar, 2009
- Washington University - Pulmonology Research Seminar, 2009 and 2012
- Le Bonheur Children's Hospital – Pediatric Grand Rounds, 2011
- Le Bonheur Children's Hospital - Pulmonology Research Seminar, 2011
- Le Bonheur Children's Foundation Research Center - Research Seminar, 2011 and 2014
- University of Tennessee, Department of Physiology - Research Seminar, 2011
- University of Tennessee, Department of Pediatrics - NIH K-Club Lecture, 2013 and 2014
- Experimental Biology/FASEB Meeting, 2014
- University of Miami, Department of Pediatrics – Resident & Fellow Conference, 2014
- UCLA, Department of Pediatrics – Research Seminar, 2014
- Children's Hospital of Los Angeles (CHLA) – Research Seminar, 2014
- Los Angeles Lung Day II, 2015
- UCLA, Department of Pediatrics Grand Rounds, 2015
- Cedar Sinai Medical Center - Research Seminar, 2015
- UCLA, Department of Pulmonary & Critical Care, Grand Rounds, 2016

## **TEACHING EXPERIENCE:**

### ➤ **Formal Teaching:**

- Physiology in Nursing 108 course in 1998/99, University of Alberta, Canada.
- Physiology 210 course in 1999/2000, University of Alberta, Canada.
- Shock lecture for UCLA medical students 2006-09.
- Congenital Heart Disease lecture series, University of Tennessee Health Science Center, 2010-12.
- Fellowship Journal Club, University of Tennessee Health Science Center, 2010-12.
- Cardiology Fellowship monthly lecture series, University of Tennessee Health Science Center 2011-2015.

### ➤ **Pediatric Critical Care Fellows Trained:**

#### University of Tennessee Health Science Center:

Dr. Kimberly Ingram 2009-12, Dr. Bonny Bardhan 2009-12, Dr. Rebekah Shappley 2009-10 and 2011-13, Dr. Astrid Gutierrez Zepeda, 2011-12, Dr. Fabio Savorgnan, 2010-13, Dr. Rajat Pareek, 2011-14, Dr. Cody Tigges, 2012-15, Dr. Paige Klingborg, 2012-15, Dr. Tricia Alleyne 2013-15, Dr. Catherine Taylor 2013-15, Dr. Peter Mangubat 2013-15.

#### Mattel Children's Hospital at UCLA:

Dr. Pricilla Yu (2015), Dr. Leanna Huard (2015), Dr. Sumit Datta (2015-present), Dr. Raul Rodriguez (2015-present), Dr. Antonia Melas (2015-present), Dr. Michael Favazza (2015-present), Dr. Israel Temple (2015-present), Dr. Michael Martinez (2015-present), Dr. Denise Purdie (2015-present), Dr. Kathy Lewis (2015-present).

➤ **Pediatric Cardiology Fellows Trained (Cardiac Critical Care Training):**

University of Tennessee Health Science Center:

Dr. Alejandro Arevalo 2008-11, Dr. Ryan Jones 2008 -2011, Dr. Soi Chan 2009-12, Dr. James Bishara 2009-12, Dr. Thomas Yohanan 2010-13, Dr. Ranjeet Phillip 2010-13, Dr. Lauren Haddad 2011-14, Dr. Pooja Kashyap 2011-14, Dr. Jason Alexander 2013-15, Dr. Saradha Subramanian 2013-15, Dr. Michael Perez 2013-15, Dr. Mario Briceno 2013-15.

➤ **Primary Research Mentor** for Dr. Rupal Patel, Neonatology Fellow (2015-present).

➤ **Mentor** for the University of California DGSOM Pediatric Student Interest Group (2015-present).

**PROFESSIONAL MEMBERSHIPS:**

Member of the Society for Pediatric Research 2012-present

Member of the Society for Critical Care Medicine 2006-present

Member of the American Thoracic Society 2009-present

Member of the Tennessee Medical Association 2011-2013

Member of the Pediatric Cardiac Intensive Care Society 2010

Member of the California Thoracic Society since 2006-2009

Member of American Academy of Pediatrics 2003-present

Member of the Canadian Physiologic Society 1998-2004

Member of the American Academy of Allergy, Asthma and Immunology 1999-2004

Member of the American Physiologic Society 2001-2004

Member of the European Academy of Allergology and Clinical Immunology 2001-2004



## **RESEARCH SUPPORT:**

### **Ongoing Research Support:**

- **NIH K08** Mentored Clinical Scientist Development Award, 02/2015-02-2019.  
Role: Principal Investigator.  
Project: The role of 2-pore domain potassium channels in Acute Lung Injury.
- **American Lung Association (ALA) Biomedical Grant**, 10/2013-10/2015, (\$40,000/year).  
Role: Principal Investigator.  
Project: The role of the 2-pore domain potassium channel TREK-1 in Acute Lung Injury.
- **Development funds** from the Mattel Children's Hospital and the Children's Discovery Institute (CDI) at UCLA, 01/2015-01/2019, (\$600,000).  
Role: Principal Investigator.  
Project: The role of stretch-activated ion channels in Acute Lung Injury/ARDS.

### **Completed Research Support:**

- **Marie Louise Imrie Award**, Austria, 2000.  
Role: Principal Investigator.  
Project: The role of ion channels in eosinophil activation.
- **Junior Researcher Award from "HGV Suedtirol"**, Italy, 2001.  
Role: Principal Investigator.  
Project: The role of ion channels in eosinophil activation.
- **Postdoctoral Fellowship of the Alberta Heritage Foundation for Medical Research**, Canada, 2001-03.  
Role: Principal Investigator.  
Project: The role of ion channels in mast cell activation.
- **Studentship of the Alberta Heritage Foundation for Medical Research**, Canada, 2000-02.  
Role: Principal Investigator.  
Project: The role of ion channels in human eosinophil activation.
- **Development funds from the Department of Pediatrics**, Le Bonheur Children's Hospital, 2009-10.  
Role: Principal Investigator.  
Project: The role of stretch-activated ion channels in Acute Lung Injury.
- **Bea Gerber Award 2011**, Le Bonheur Children's Foundation Research Institute (\$5000).  
Role: Principal Investigator.  
Project: The role of stretch-activated ion channels in Acute Lung Injury.

- **Le Bonheur Children’s Foundation Research Institute “New Investigator Award”** 2010-13. (\$20,000/yr).  
Role: Principal Investigator.  
Project: The role of stretch-activated ion channels in Acute Lung Injury.
- **NIH (NICHD) K12 Pediatric Critical Care Scientist Development Program** (HD047349-23114-38), 01/2013-01/2014 (\$75,000/year).  
Role: Principal Investigator.  
Project: The role of stretch-activated ion channels in Acute Lung Injury.
- **Development funds** from the Division of Critical Care Medicine and the College of Medicine, University of Tennessee Health Science Center, 07/2009-07/2016, (\$300,000).

**Previously submitted, non-funded Research and Grant Applications:**

- **University of Tennessee Health Science Center Request For Application (RFA) Stimulus Fund Program**, 2010. Role: Principal Investigator.
- **Parker B. Francis Fellowship**, 2010. Role: Principal Investigator.
- **American Lung Association Biomedical Grant**, 2011. Role: Principal Investigator.
- **NIH K12 Pediatric Critical Care Scientist Development Program**, 2011. Role: Principal Investigator.
- **Pew Foundation Scholarship**, 2012. Role: Principal Investigator.
- **Society for Pediatric Research Young Investigator Coaching Program**, 2012 and 2013. Role: Principal Investigator
- **UH Harrington Discovery Institute Scholar Innovator Grant**, 2012 and 2013. Role: Principal Investigator.
- **NIH K08 Mentored Clinical Scientist Development Award**, 2012 (priority score 37). Role: Principal Investigator
- **Collaborative for Pediatric Critical Care Network (CPCCRN) grant**, 2014. Role: Co-Principal Investigator.

## **PUBLICATIONS:**

### **PEER-REVIEWED MANUSCRIPTS:**

1. **Schwingshackl, A.**, Blasko, I., Steiner, E., Pozzilli, P., Cavallo, M.G., Berger, P. and Grubeck-Loebenstein, B. Sex steroids do not prevent amylin-induced apoptosis in human cells. *J. Exp. Cell Res.* 241:265-268 (1998).
2. **Schwingshackl, A.**, Duszyk, M., N. Brown, and Moqbel, R. Human eosinophils release matrix metalloproteinase-9 upon stimulation with tumor necrosis factor- $\alpha$ . *J Allergy Clin Immunol.* 104;983-990 (1999).
3. **Schwingshackl, A.**, Moqbel, R, and Duszyk, M. Involvement of ion channels in human eosinophil respiratory burst. *J Allergy Clin Immunol.* 106;272-279 (2000).
4. **Schwingshackl, A.**, Moqbel, R, and Duszyk, M. Nitric oxide activates ATP-dependent K<sup>+</sup> channels in human eosinophils. *J Leukoc Biol.* 71:807-812 (2002).
5. Vliagoftis, H., **Schwingshackl, A.**, Milne, C., Duszyk, M., Hollenberg, M., Wallace, J., Befus, DA., and R. Moqbel. Proteinase activated receptor-2 mediated matrix metalloproteinase-9 release from airway epithelial cells. *J Allergy Clin Immunol.* 106;537-545 (2000).
6. Kulka M., **Schwingshackl A.**, Befus AD. Mast cells express chloride channels of the CIC family. *Inflamm Res.* 51(9):451-6 (2002).
7. Lemke, RP., Zhang, W., Balcerazk, D., Kobayashi, K., **Schwingshackl, A.**, Cheung, P., Dixon, WT., Baracos, V., Greer, J. Expression and activity of matrix metalloproteinase 2 and 9 and their inhibitors in rat lungs during the perinatal period and in diaphragmatic hernia. *Experimental Lung Res.* 29;4 (2003).
8. Tachdjian, R., Al Khatib, S., **Schwingshackl, A.**, Kim, HS., Chen, A., Mathias, C., Kim, HY., Umetsu, U., Oettgen, UH., Chatila, T. In vivo Regulation of the Allergic Response by the Interleukin 4 Receptor Alpha Chain Immunoreceptor Tyrosine-based Inhibitory Motif. *J Allergy Clin Immunol.* 125(5):1128-1136 (2010).
9. **Schwingshackl, A.**, Teng, B., Ghosh, M., West, N., Makena, M., Gorantla, V., Sinclair, CE., Waters, CM. Regulation and function of the two-pore-domain (K2P) potassium channel TREK-1 in alveolar epithelial cells. *Am J Physiol Lung Cell Mol Physiol.* 302:L93-L102 (2012).
10. **Schwingshackl, A.**, Teng, B., Ghosh, M., Lim, KG., Tigyi, G., Narayanan, D., Jaggar, JH., Waters, CM. Regulation of Interleukin-6 Secretion by the Two-Pore-Domain Potassium (K2P) Channel TREK-1 in Alveolar Epithelial Cells. *Am J Physiol Lung Cell Mol Physiol.* Feb 15;304(4):L276-86 (2013).
11. Ghosh, M., Gorantla, V., Makena, P., Luellen, C., Sinclair, SE., **Schwingshackl, A.**, Waters, CM. Insulin like growth factor-1 stimulates differentiation of AT II cells to AT I-like cells through activation of Wnt5a. *Am J Physiol Lung Cell Mol Physiol.* Aug 1;305(3):L222-8 (2013).
12. **Schwingshackl, A.**, Teng, B., Ghosh, M, and Waters, CM. Regulation of Monocyte Chemotactic Protein-1 (MCP-1) Secretion by the Two-Pore-Domain Potassium (K2P) Channel TREK-1 in Human Alveolar Epithelial Cells. *Am J Transl Res.* Aug 15;5(5):530-42 (2013).
13. Roan, E., Waters, CM., Teng, B., Ghosh, M., and **Schwingshackl, A.** The 2-Pore Domain Potassium Channel TREK-1 Regulates Stretch-induced Detachment of Alveolar Epithelial Cells. *PLoS ONE* 9(2): e89429 (2014).
14. **Schwingshackl, A.** The Fallacy of Chasing after Work-Life Balance. *Front. Pediatr.* doi: 10.3389/fped.2014.00026 (2014).

15. **Schwingshackl, A.**, Teng, B., Makena, P, Ghosh, M, Sinclair, SE., Luellen, C., Balasz, L., Bryan, RM., Lloyd, EE., and Waters, CM. Deficiency of the Two-Pore-Domain Potassium (K2P) Channel TREK-1 Promotes Hyperoxia-Induced Acute Lung injury. *Crit Care Med.* Nov;42(11):e692-701 (2014).
16. Brune, K., Frank, J., **Schwingshackl, A.**, Finigan, J., Sidhaye, V. Pulmonary epithelial barrier function: some new players and mechanisms. *Am J Physiol Lung Cell Mol Physiol*; Apr 15;308(8):L731-L745. doi: 10.1152/ajplung.00309 (2014).
17. Drago, BB., Kimura, D., Rovnaghi, C., **Schwingshackl, A.**, Meduri, U., Anand, KJS. Methylprednisolone Infusion in Pediatric Acute Lung Injury Results from a Double-Blind, Placebo-Controlled Randomized Trial. *J Ped Crit Care Med*; Mar;16(3):e74-81. doi: 10.1097 (2015).
18. Philip, R., Alpert, PS., **Schwingshackl, A.**, Huang, X., Blakely, D., Rovnaghi, CR., Tran, QT., Velasquez, A., Arevalo, A., and Anand, KJ. Inverse Relationship between Cardio-Ankle Vascular Index and Body Mass in Healthy Children. *J Pediatr.*; S0022-3476(15)00426-6. doi: 10.1016 (2015).
19. **Schwingshackl, A.**, Roan, E., Teng, B., and Waters, CM. TREK-1 Regulates Cytokine Secretion from Alveolar Epithelial Cells Independently of Cytoskeletal Rearrangements. *PLoS One*; 22;10(5):e0126781. doi: 10.1371 (2015).
20. **Schwingshackl, A.**, Kimura, D, Rovnaghi, CR., Cormier, SA., Teng, B., Meduri, U., and Anand, KJS. Regulation of Inflammatory Biomarkers by Intravenous Methylprednisolone in Pediatric ARDS Patients: Results from a Double-Blind, Placebo-Controlled Randomized Pilot Trial, *Cytokine* (2015), (revision submitted).
21. Andrews, K., Ghosh, M., **Schwingshackl, A.**, Rapalo, G., Luellen, C., Waters, CM., and Fitzpatrick, EA. Chronic hypersensitivity pneumonitis caused by *Saccharopolyspora rectivirgula* is associated with a Th17/IL-17 response and not a switch to a Th2 response. *Am J Physiol Lung Cell Mol Physiol.* (2015), (submitted).
22. **Schwingshackl, A.**, Teng, B., Ghosh, M., Luellen, C, Lesage, F., and Waters, CM. The Role of 2-Pore Domain Potassium (K2P) Channels in Ventilator-Associated Lung Injury. *Am J Transl Res*, (in preparation).
23. **Schwingshackl, A.** The role of stretch-activated ion channels in Acute Respiratory Distress Syndrome. Finally a new target? *Invited Review. Am J Resp Cell Mol Biol.* (manuscript in preparation).

### **SELECTED ABSTRACTS:**

1. **Schwingshackl, A.**, Duszyk, M., N. Brown, and Moqbel, R. Tumor necrosis factor- $\alpha$  induces synthesis and release of matrix metalloproteinase-9 from human eosinophils. National Medical Research Council of Canada (MRC) Graduate Student Poster Presentation, Winnipeg, Canada (1999).
2. **Schwingshackl, A.**, Duszyk, M., N. Brown, and Moqbel, R. Tumor necrosis factor- $\alpha$  induces synthesis and release of matrix metalloproteinase-9 from human eosinophils. Alberta Respiratory Disease Symposium, Banff, Canada (1999).
3. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. The role of chloride currents in the production of superoxide in human eosinophils. American Academy of Allergy, Asthma and Immunology, San Diego, California. *J Allergy Clin Immunol*, 105(2):S254 (2000).
4. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. The role of chloride currents in the production of superoxide in human eosinophils. National Student Research Forum, Galveston, Texas (2000).

5. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. Superoxide production in human eosinophils is associated with chloride movement. American Thoracic Society, Toronto, Canada. Am J Respir Crit Care Med, 161(3) (2000).
6. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. Which chloride channels are relevant to human eosinophil superoxide production? 9<sup>th</sup> Canadian Resident Fellow Competition in Respiratory Research, Huntsville, Canada (2000).
7. Vliagoftis, H., **Schwingshackl, A.**, Duszyk, M., Hollenberg, M., Wallace, J., Befus, DA., and R. Moqbel. Proteinase activated receptor-2 (PAR-2) mediated matrix metalloproteinase-9 release from airway epithelial cells. American Thoracic Society, Toronto, Canada. Am J Respir Crit Care Med, 161(3) (2000).
8. **Schwingshackl, A.**, Duszyk, M., and R. Moqbel. Identification of chloride channels involved in human eosinophil respiratory burst. American Academy of Allergy, Asthma and Immunology, New Orleans, Louisiana, J Allergy Clin Immunol, 107(2):S47 (2001).
9. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. Phosphorylation of p47<sup>phox</sup> in human eosinophils is chloride-dependent. Experimental Biology/FASEB, March 2001, Orlando, Florida, FASEB Journal, Abstracts 15:5; 676.7 (2001).
10. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. Human eosinophil respiratory burst is associated with chloride movement. Alberta Respiratory Disease Symposium, Kananaskis, Canada, (2001).
11. **Schwingshackl, A.**, Duszyk, M., and R. Moqbel. Chloride dependency of phosphorylation of the phagocytic oxidase, p47<sup>phox</sup>, in human eosinophils. First Symposium of the International Eosinophil Society, Banff, Alberta, Canada (2001).
12. **Schwingshackl, A.**, Moqbel, R., and M. Duszyk. Identification and characterization of K<sup>+</sup> channels in human eosinophils. American Academy of Allergy, Asthma and Immunology, New York, New York, (2002).
13. **Schwingshackl, A.**; Tachdjian, R; Al Khatib, S; Chatila, T. Dysregulated IgE Production and Allergic Airway Inflammation in Interleukin 4 Receptor Alpha Chain ITIM Motif Mutant Mice. Am J Respir Crit Care Med 179:A2758 (2009).
14. **Schwingshackl, A.**, West, N; Makena, P, Gorantla, V, Sinclair, S, Waters, C. Hyperoxia and mechanical stretch regulate expression of two-pore-domain potassium (K2P) channels in lung epithelium. Am J Respir Crit Care Med 181:A6789 (2010).
15. **Schwingshackl, A.**, Teng, B, Ghosh, M, West, N, Makena, M, Gorantla, V, Sinclair, CE, and Waters, CM. Regulation and function of the two-pore-domain (K2P) potassium channel TREK-1 in epithelial cells during acute lung injury. Am J Respir Crit Care Med 183:A4235 (2011).
16. **Schwingshackl, A.**, Teng, B, Ghosh, M, and Waters, CM. The role of the 2-Pore Domain K<sup>+</sup> Channel TREK-1 in alveolar barrier function. Society of Critical Care Medicine Annual Meeting (2012).
17. **Schwingshackl, A.**, Teng, B, Ghosh, M, Makena, P, Waters CM. The Role of the 2-Pore Domain Potassium Channel TREK-1 in Regulation of Cytokine Secretion from Alveolar Epithelial Cells. Experimental Biology Meeting (2012).
18. **Schwingshackl, A.**, Teng, B, Ghosh, M, Waters CM. The Role of the 2-Pore Domain Potassium Channel TREK-1 in Regulation of Monocyte Chemoattractant Protein-1 (MCP-1) Secretion from Alveolar Epithelial Cells. Society of Critical Care Medicine Meeting (2013).
19. **Schwingshackl, A.**, Teng, B, Ghosh, M, Lim, KG, Gabor, T, Narayanan, D, Jaggar, JH, Waters CM. The 2-Pore Domain Potassium Channel (K2P) TREK-1 regulates IL-6 release from alveolar epithelial cells independently of intra- and extracellular Ca<sup>2+</sup>. American Thoracic Society Meeting (2013).
20. **Schwingshackl, A.**, Makena, P, Teng, B, Ghosh, M, Sinclair, SE, Luellen, C, Balasz, L, Bryan, RM, Lloyd, EE, and Waters, CM. Deficiency of the Two-Pore-Domain Potassium (K2P) channel TREK-1 promotes hyperoxia-induced Acute Lung Injury. Society of Critical Care Medicine Meeting (2014).

21. Rápalo, G, Roan, E, **Schwingshackl, A**, Eckstein, E, and Waters, CM. Stimulation of mitochondrial superoxide in lung epithelial cells using a novel stretching device. Experimental Biology Meeting (2014).
22. Roan, E, Teng, B, Ghosh, M, Waters, CM, and **A. Schwingshackl**. The 2-Pore Domain Potassium Channel TREK-1 regulates stretch-induced detachment of alveolar epithelial cells. American Thoracic Society Meeting (2014).
23. Immanuel, C., **Schwingshackl, A.**, Teng, B., Luellen, C., Saravia, J., Cormier, SA., Waters, CM., and Fitzpatrick, E. Does the role of the stretch activated K<sup>+</sup> channel-TREK-1 in alveolar macrophages involve caspase-1 induced IL-1 $\beta$  release during ventilator associated lung injury? Le Bonheur Children's Hospital Research Day, (2014).
24. **Schwingshackl, A**, Roan, E, Teng, B, and Waters, CM. TREK-1 Regulates Cytokine Secretion from Alveolar Epithelial Cells Independently of Cytoskeletal Rearrangements. American Thoracic Society Meeting (2015).
25. Kimura, D, Rovnaghi, CR, Teng, B, Drago, BB, G. Meduri, U, Anand, KJS, and **Schwingshackl, A**. Differential regulation of inflammatory biomarkers by low dose methylprednisolone vs placebo in early pediatric acute respiratory distress syndrome: a multiplex analysis. Society of Critical Care Medicine Meeting (2015), (oral presentation).
26. **Schwingshackl, A**, Teng, B, Luellen, C, and Waters, CM. The Role of 2-Pore Domain Potassium (K2P) Channels in Ventilator-Associated Lung Injury. Pediatric Academic Society (PAS) Meeting (2015).
27. Kimura, D, Saravia, J, Rovnaghi, CR, Slominski, R, **Schwingshackl, A**, Meduri, GU, Cormier, SA, and K.J.S. Anand. The effect of low dose methylprednisolone on biomarker levels in early pediatric ARDS. Society of Critical Care Medicine Meeting (2016), submitted.
28. **Schwingshackl, A**, Teng, B, and CM Waters. The 2-poredomain potassium channel TREK-1 regulates cytokine secretion from human alveolar epithelial cells independently of potassium currents. Biophysical Society Meeting (2016), (submitted).

### **Editorials/Commentaries:**

1. **Schwingshackl, A**, Meduri, U, Kimura, D, Cormier, SA, and Anand, KJS. Corticosteroids in pediatric ARDS: All Cards on the Table. *Intensive Care Med*, 2015 (in press).

## **SELECTED LECTURES:**

1. Sexually Transmitted Diseases. St. Joseph's Hospital, Phoenix, AZ, 2006
2. Aortic Coarctation and Interrupted Aortic Arch. Division of Pediatric Critical Care, University of California in Los Angeles, 2006
3. Truncus Arteriosus. Pediatric Division of Pediatric Critical Care, University of California in Los Angeles, 2007
4. Abdominal Compartment Syndrome. Division of Pediatric Critical Care, University of California in Los Angeles, 2007
5. RSV Infection and Steroids. Division of Pediatric Critical Care, University of California in Los Angeles, 2007
6. Cardiomyopathies. Division of Pediatric Critical Care, University of California in Los Angeles, 2008
7. Pericarditis. Division of Pediatric Critical Care, University of California in Los Angeles, 2008
8. Extracorporeal life support for severe respiratory failure in children with immune compromised conditions. Division of Pediatric Critical Care, University of California in Los Angeles, 2008
9. Ebstein's Malformation. Division of Pediatric Critical Care, University of California in Los Angeles, 2009
10. Acute Liver Failure. Division of Pediatric Critical Care, University of California in Los Angeles, 2009
11. Dexmedetomidine as the primary sedative during invasive procedures in infants and toddlers with congenital heart disease. Division of Pediatric Critical Care, University of California in Los Angeles, 2009
12. Ebstein's Malformation. Division of Pediatric Critical Care, University of California in Los Angeles, 2009
13. Pediatric Shock. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2009
14. Myocarditis. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2010
15. Tetralogy of Fallot. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2010
16. Nutrition in the ICU. Le Bonheur Heart Institute, University of Tennessee Health Science Center, 2010
17. Nutrition in the ICU. Le Bonheur Heart Institute, University of Tennessee Health Science Center, 2011
18. Ultrasound Applications in the ICU. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2011
19. Ultrasound Applications in the ICU. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2012
20. Basics of the Pediatric Airway. Le Bonheur Heart Institute, University of Tennessee Health Science Center, 2012
21. Cardiomyopathies. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2012
22. Cardiopulmonary Interactions. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2013
23. An Update on Cardiomyopathies. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2013
24. Interpretation of perioperative imaging studies in the CVICU. Le Bonheur Heart Institute, University of Tennessee Health Science Center, 2013.

25. How to get a K-award without being a genius. K-club lecture series, University of Tennessee Health Science Center, 2013.
26. Optimal complement phagocytosis of Pseudomonas aeruginosa by monocytes is CFTR-dependent. Le Bonheur Children's Foundation Research Institute, 2013.
27. Cardiomyopathies. Basics and Treatment Approaches. Division of Pediatric Critical Care, University of Tennessee Health Science Center, 2014
28. Report From the Front: My Experience in Securing K Award Funding, K-club lecture series, University of Tennessee Health Science Center, 2014.
29. The role of 2-pore domain potassium channels in ARDS. Le Bonheur Children's Foundation Research Center, Research-In-Progress Seminar 2014.
30. The role of stretch-activated ion channels in ARDS. Experimental Biology/FASEB Meeting, 2014.
31. The role of stretch-activated ion channels in ARDS. University of Miami, Department of Pediatrics – Resident & Fellow Conference, 2014.
32. The role of stretch-activated ion channels in ARDS. Division of Pediatric Critical Care, University of California in Los Angeles (UCLA) – Research Seminar, 2014.
33. The role of stretch-activated ion channels in ARDS. Division of Pediatric Critical Care, Children's Hospital of Los Angeles (CHLA), – Research Seminar, 2014
34. Neurotransmitter Physiology, Division of Pediatric Critical Care, University of California in Los Angeles (UCLA) – Fellow Seminar, 2015.
35. Physiology and applications of Nitric Oxide (NO) in the ICU, Division of Pediatric Critical Care, University of California in Los Angeles (UCLA) – Fellow Seminar, 2015.
36. Pediatric airway management, Division of Pediatric Critical Care, University of California in Los Angeles (UCLA) – Fellow Seminar, 2015.