

**CHARITHARTH VIVEK LAL, MD**

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**EDUCATION**

**Graduate or medical school**

- |         |   |            |
|---------|---|------------|
| 2001-06 | Government Medical College, Nagpur, India | MD         |
| 2006-07 | JG Hospital, New Delhi, India             | Internship |

**Other postgraduate education**

- |          |  |  |
|----------|--|--|
| 2008-11  | Children's and Women Hospital,<br>University of S. Alabama, Mobile, Alabama, USA | Residency in Pediatrics                          |
| 2011-14  | University of Texas at Southwestern Medical Center, Dallas,<br>Texas, USA        | Fellowship in Neonatal and<br>Perinatal Medicine |
| 2013- 14 | University of Texas at Southwestern Medical Center, Dallas,<br>Texas, USA        | Chief Fellow, Neonatal and<br>Perinatal Medicine |

**Current position**

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|------|---------------------------------------|---|
| 2014 | University of Alabama, Birmingham, AL | Assistant Professor, Neonatology<br>Director, Small Baby<br>Golden Week Program |
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**Current hospital affiliations**

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|------|--|------------------------------------|
| 2014 | Children's Hospital of Alabama, Birmingham, AL | Assistant Professor<br>Neonatology |
| 2014 | UAB Women and Infant Center, Birmingham, AL    | Assistant Professor<br>Neonatology |

## **MAJOR HONORS AND AWARDS**

- 1999 National Talent Search Examination (NTSE), India
- 1999 Governor's Certificate of Excellence - Regional topper, CBSE, India
- 2008 Cambridge's Who's Who
- 2012 Selected for the NICHD Young Investigator Conference, Chicago
- 2012 Selected for SPR (Society of Pediatric Research) Fellow Section
- 2012 AAP Travel Award, AAP National Conference and Exhibition, New Orleans
- 2012 AAP Young Investigator Award, AAP National Conference, New Orleans 2012  
Featured as Trainee in Research Spotlight – AAP TECaN Newsflash, Dec 2012
- 2013 AAP Travel Award, AAP Workshop for Perinatal Practice Strategies, Scottsdale, AZ
- 2013 SPR/PAS Fellow's Basic Science Award, Washington DC
- 2014 SSPR Young Investigator Award Finalist, New Orleans, LA 2014  
Top Research Abstracts, Senior Research Day, UTSW, Dallas, TX
- 2014 Young Investigator Award at Neonatal Cardiopulmonary Forum, Chicago, IL
- 2016 SSPR Young Investigator Award Finalist, New Orleans, LA

## **FUNDING**

- 2014 Cardiopulmonary Young Investigator Grant by Ikaria Therapeutics
- 2014 Early Career Development Fund, Division of Neonatology, Pediatrics, UAB
- 2015 NIH 1R01HL129907-01 – Co-Investigator (Lal CV), PI (Ambalavanan N)  
*Signature of Top Omic Profiles in Bronchopulmonary Dysplasia (STOP-BPD)*

## **LICENSURE**

- 2007 Maharashtra Medical Council, India
- 2008 Education Commission for Foreign Medical Graduates (ECFMG)
- 2011 Alabama Board of Medical Education
- 2011 Texas Medical Board – Physician in Training Permit

## **CERTIFICATION**

- 2011 Board Certification - American Board of Pediatrics
- 2014 American Academy of Pediatrics - Neonatal Resuscitation Program – Instructor Course
- 2014 American Academy of Pediatrics - Essential Care for Every Baby – Master Trainer
- 2014 American Academy of Pediatrics - Helping Babies Breathe - Master Trainer
- 2015 Center for Clinical and Translation Science Training Program: University of Alabama

## **OTHER TRAINING**

- 2008 Pediatric Advanced Life Support (PALS)
- 2008 Neonatal Resuscitation Program (NRP)
- 2011 Neonatal Physiology Course at UT Southwestern, Dallas
- 2011 Neonatal Evidence Based Medicine Course at UT Southwestern, Dallas
- 2012 Designing Clinical Trial Workshop  
NICHD Young Investigator Conference, Chicago
- 2012 Grant Writing – NIH Mock Study Section  
NICHD Young Investigator Conference, Chicago
- 2012 Fellows Core-Curriculum at Pediatric Academic Society Annual Meeting
- 2012 Extra Corporeal Membrane Oxygenation (ECMO) Course at  
Children’s Medical Center, Dallas, TX
- 2012 Course in Conceptual Statistics at UT Southwestern, Dallas, TX
- 2014 Workshop - Phenotyping Mouse Models of Human Lung Disease at  
The Jackson Labs, Bar Harbor, Maine

## **INVITED LECTURES / SEMINARS**

- 2012 'Full Throttle NRP' with Dr Myra Wyckoff  
at the AAP- Scott and White Annual Neonatal Conference, Temple, Texas
- 2012 'NRP Current Issues Seminar' Simulation Session  
at the AAP- National Conference and Exhibition at New Orleans
- 2013 'NRP Current Issues Seminar' Simulation Session  
at the AAP- National Conference and Exhibition at Orlando, FL
- 2013 Vascular Mediators in BPD - Perinatal Grand Rounds,  
University of Alabama, Birmingham, AL
- 2014 Grand Rounds: Bronchopulmonary Dysplasia and Pulmonary  
Hypertension, Apollo Hospitals, New Delhi, India
- 2014 Guest Faculty Rounds: All India Institute of Medical  
Sciences (AIIMS), New Delhi, India

## **PROFESSIONAL SOCIETIES**

- 2008 Current American Academy of Pediatrics (AAP)
- 2008 AAP- Alabama Chapter
- 2011 AAP- Section on Perinatal Pediatrics
- 2011 AAP- Texas Chapter
- 2011 AAP TECaN (Trainee and Early Career Neonatologist)
- 2012 Society of Pediatric Research (SPR)
- 2014 Southern Society of Pediatric Research (SSPR)
- 2014 American Thoracic Society (ATS)

## **ADMINISTRATIVE RESPONSIBILITIES, COMMITTEES and SERVICE**

### **Government Medical College and Hospital, Nagpur, India**

- 2002- Co-General Secretary Music Society / Students Council  
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### **University of S Alabama, Children and Women Hospital**

- 2009- Pediatric-Neonatology Committee (Resident representative)  
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2009-10 Research Committee, Pediatric Residency

2010-11 Research Committee, Pediatric Residency

2010-11 Resident Selection Committee, Pediatric Residency

**University of Texas Southwestern Medical Center**

2011-14 Committee for Website design for Division of Neonatology, UT Southwestern, Dallas

2012-14 University of Texas Southwestern **Representative – for TECaN** (AAP -Trainee and Early Career Neonatologist)

## **BIBLIOGRAPHY-**

### **Peer Reviewed Manuscripts and Abstracts**

**Charitharth Vivek Lal**, Colm Travers, Ranjit Kumar, Peter Eipers, Tamas Jilling, Rune Toms, Brian Halloran, Waldemar A. Carlo, Casey Morrow, Vineet Bhandari, Namasivayam Ambalavanan. The Airway Microbiome at Birth. *Currently in review*

Daniel Lee\*, **Charitharth Vivek Lal\***, Niranjana Awasthi, Elizabeth Persad, Haiming Xu, Anna M Schwarz, Roderich E Schwarz, and Margaret A Schwarz.  
Role of EMAP II in BPD. *Currently in review*  
(\*Co-First Authors)

Olave N, **Charitharth Vivek Lal**, Halloran B, Pandit K, Cuna AC, Faye-Petersen OM, Kelly DR, Nicola T, Benos P, Kaminski N, Ambalavanan N.  
Regulation of Alveolar Septation by MicroRNA-489. *Am J Physiol Lung Cell Mol Physiol*. 2015 Dec 30:ajplung.00145.2015.

**Charitharth Vivek Lal**, Namasivayam Ambalavanan.  
Genomics of Bronchopulmonary Dysplasia. *Seminars in Perinatology* 2015 Oct 12 . pii: S0146-0005(15)00126-3. doi: 10.1053/j.semperi.2015.09.004.

Parvesh M Garg, Padma P Garg, **Charitharth V Lal**  
Necrotizing Enterocolitis (NEC): A Devastating Disease of Prematurity. *Journal of Neonatal Biol* 4: 202.  
doi: 10.4172/2167-0897.1000202

**Charitharth Vivek Lal**, Namasivayam Ambalavanan.  
Biomarkers, Early Diagnosis and Clinical Predictors of Bronchopulmonary Dysplasia. *Clinics in Perinatology*. Dec 2015, doi:10.1016/j.clp.2015.08.004

**Charitharth V. Lal**, Nelida Olave, Namasivayam Ambalavanan.  
Mir219-5p in Bronchopulmonary Dysplasia. *Am J Respir Crit Care Med* 191, A4073.

**Charitharth V. Lal**, N Awasthi, H Xu, A Schwarz, R Schwarz, R Savani, M Schwarz  
Role of EMAP II in BPD. *Journal of Investigative Medicine* 62 (2), 513-513

**Charitharth Vivek Lal, MD**, Rashmin Savani, MBChB  
Pulmonary Hypertension in Bronchopulmonary Dysplasia : Epidemiology and Pathophysiology. *Early Human Development*. *In press, Early Human Development*

**Charitharth Vivek Lal, MD**, Vishal Kapadia, MD, James Moore, MD PhD  
Pulmonary Hypertension in Bronchopulmonary Dysplasia : Diagnosis  
Early Human Development. *In press, Early Human Development*

Vishal Kapadia, MD, **Charitharth Vivek Lal, MD**, Venkat Kakillaya, MD, Myra Wyckoff, MD.  
Neurodevelopmental Outcomes of Low Oxygen Resuscitation of Preterm Infants in the Delivery Room. *In submission 2015*.

**Charitharth Vivek Lal**, Mir IN, Kelley E, Weprin BE, Sengupta AL, Booth TN, Brion LP.  
Hypomagnesemia secondary to cerebrospinal fluid losses in a patient with congenital hydrocephalus. *Journal of Perinatology*. 2014 Aug;34(8):640-1. doi: 10.1038/jp.2014.56.

**Charitharth Vivek Lal**, Schwarz MA.

Vascular mediators in chronic lung disease of infancy: role of endothelial monocyte activating polypeptide II (EMAP II). *Birth Defects Res A Clin Mol Teratol*. 2014 Mar;100(3):180-8. doi: 10.1002/bdra.23234.

Bennett KM, Afanador MD, **Charitharth Vivek Lal**, Xu H, Persad E, Legan SK, Chenaux G, Dellinger M, Savani RC, Dravis C, Henkemeyer M, Schwarz MA.

Ephrin-B2 reverse signaling increases  $\alpha 5\beta 1$  integrin-mediated fibronectin deposition and reduces distal lung compliance. *Am J Respir Cell Mol Biol*. 2013 Oct;49(4):680-7. doi: 10.1165/rcmb.2013-0002OC.

Zayek MM, Benjamin JT, Maertens P, Trimm RF, **Charitharth Vivek Lal**, Eyal FG.

Cerebellar hemorrhage: a major morbidity in extremely preterm infants.

*Journal of Perinatology*. 2012 Sep;32(9):699-704. doi: 10.1038/jp.2011.185..

**Charitharth Vivek Lal**, Batten L. A rare case of dextrocardia, situs inversus, atrioventricular and ventriculoarterial discordance and right anterior aorta in a neonate. *Journal of Investigative Medicine* 58(2): 512, 2010

**Charitharth Vivek Lal**, Preud'Homme, Vitamin D25(OH) level in an obese pediatric population does not correlate with markers of insulin resistance. *Journal of Investigative Medicine, February 2010*

**Charitharth Vivek Lal**, Preud'Homme, D. Vitamin D25(OH) in an obese pediatric population living below 35 degrees latitude during the summer. *Journal of Investigative Medicine, February 2010*

**Charitharth Vivek Lal**, Zayek M. Early Use of Vasopressors - A Cause of Cerebellar Hemorrhage in Very Premature Infant. *AAP National Conference and Exhibition, October 2010*

**Charitharth Vivek Lal**, Zayek M. The use of vasopressors should be carefully balanced with the increased risk of Cerebellar Hemorrhage in the extremely premature infants. *Southern Society of Pediatric Research, February 2011*

**Charitharth Vivek Lal**, E. Persad MD, Haiming Xu, Anna Schwarz, Roderich Schwarz, and Margaret A. Schwarz

Administration of Endothelial Monocyte Activating Polypeptide (EMAP II) function blocking Antibody rescues alveolarization and reduces cellular proliferation in Bronchopulmonary Dysplasia (BPD) – *AAP National Conference and Exhibition, October 2012*

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Rashmin C Savani, MBChB, Roderich E Schwarz, MD and Margaret A Schwarz, MD. Endothelial Monocyte Activating Polypeptide II (EMAP II) Induces Bronchopulmonary Dysplasia (BPD)-Like Phenotype in Uninjured Mice, and Hyperoxia-induced BPD is Improved by an EMAP II Blocking Antibody. *Pediatric Academic Society, May 2013*

**Charitharth Vivek Lal, MD**, Joseph B Cantey, MD, Shawn Varghese, Lisa M Scheid, MD, Sylvia Trevino, Mambarambath Jaleel, MD and Pablo Sanchez, MD. Obtaining Blood Cultures (BC) in the Neonatal Intensive Care Unit (NICU): Central, Peripheral or Both? *Pediatric Academic Society, May 2013*

Vishal S Kapadia, MD, Venkat Kakkilaya, MD, **Charitharth Vivek Lal**, MD, Rashmin C Savani, MBChB and Myra H Wyckoff, MD, PAS 2013

Delivery room (DR) Resuscitation using 2011 Neonatal Resuscitation Program (NRP) Oxygen

Guidelines is Associated with Reduced Bronchopulmonary Dysplasia (BPD) in Preterm Neonates. *Pediatric Academic Society, May 2013*

**Charitharth V. Lal**, Jie Liao, Naeun Cheong, Christopher Longoria, Alain Cuna, Ona M. Faye-Petersen, David R. Kelly, Namasivayam Ambalavanan, Rashmin C. Savani.

CD44 is necessary for increased lung IL1Beta/TGFBeta and decreased alveolarization in mice exposed to hyperoxia and is elevated in preterm infant with BPD. *Pediatric Academic Society (PAS), Vancouver, Canada, May 2014*

Reina S. Mayor, Brenna Hill, Jordan Zehr, Michael Neinast, Eugenia Morselli, **Charitharth Vivek Lal**, Lisa Hahner, Rashmin Savani, Deborah Clegg. In utero exposure to maternal high fat diet increases fetal lung inflammation impairing lung development. *Pediatric Academic Society (PAS), Vancouver, Canada, 2014*

**Charitharth V. Lal**, Nelida Olave, Namasivayam Ambalavanan. Mir219-5p in Bronchopulmonary Dysplasia. *Pediatric Academic Society (PAS), San Diego, CA 2015.*

**Charitharth V. Lal**, Nelida Olave, Trent Tipple, Namasivayam Ambalavanan. Early Airway MicroRNA Signature is Predictive of Bronchopulmonary Dysplasia in Extremely Preterm Infants. *Gordon Conferece, Lung Injury and Repair, NH, 2015.*

### **Platform Presentations**

**Charitharth Vivek Lal**, Preud'Homme, D. Vitamin D25(OH) in an obese pediatric population living below 35 degrees latitude during the summer. *Platform Presentation at: Southern Regional Meetings; New Orleans, LA, February 2010*

E. Persad MD, **Charitharth Vivek Lal MD**, Haiming Xu PhD, Michelle Jennings, Rashmin C. Savani MBChB, and Margaret A. Schwarz MD  
Endothelial-Monocyte Activating Polypeptide II (EMAP II) is produced by epithelial cells and macrophages in Bronchopulmonary Dysplasia (BPD).  
*Platform presentation, Research Day, Dept of Pediatrics, UTSW, Dallas, May 2012. Selected as one of the Top 5 Scientific Abstracts*

**Charitharth Vivek Lal**, Elizabeth A. Persad, Haiming Xu, Anna Schwarz, Roderich Schwarz, and Margaret A. Schwarz MD –  
Administration of Endothelial Monocyte Activating Polypeptide (EMAP II) function blocking Antibody rescues alveolarization and reduces cellular proliferation in Broncho Pulmonary Dysplasia (BPD)*Platform presentation, AAP NCE October 2012, New Orleans. Winner of the AAP Section of Perinatal Pediatrics Travel Award and AAP Young Investigator Award*

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Rashmin C Savani, MBChB, Roderich E Schwarz, MD and Margaret A Schwarz, MD. Endothelial Monocyte Activating Polypeptide II (EMAP II) Induces Bronchopulmonary Dysplasia (BPD)-Like Phenotype in Uninjured Mice, and Hyperoxia-induced BPD is Improved by an EMAP II Blocking Antibody.  
*Platform Presentation, Pediatric Academic Society (PAS), Washington DC, 2013. Winner of SPR/PAS Fellow Basic Science Award*

Vishal S Kapadia, MD, Venkat Kakkilaya, MD, **Charitharth Vivek Lal**, MD, Rashmin C Savani, MBChB and Myra H Wyckoff, MD, PAS 2013

Delivery room (DR) Resuscitation using 2011 Neonatal Resuscitation Program (NRP) Oxygen Guidelines is Associated with Reduced Bronchopulmonary Dysplasia (BPD) in Preterm Neonates. *Platform presentation, Pediatric Academic Society (PAS), Washington DC 2013*

**AAP Travel Award. Selected in Top Ten Abstracts**

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Roderich E Schwarz, MD, Rashmin C Savani, MBChB, and Margaret A Schwarz, MD. Endothelial Monocyte Activating Polypeptide II (EMAP II) Induces Bronchopulmonary Dysplasia (BPD)- *Platform Presentation, AAP Southwest Conference, Lakeway, TX*

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Roderich E Schwarz, MD, Rashmin C Savani, MBChB and Margaret A Schwarz, MD. BPD: Development of a Developmental Therapy. *AAP Conference, Marco Island, FL*

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Roderich E Schwarz, MD, Rashmin C Savani, MBChB and Margaret A Schwarz, MD. BPD: Role of EMAP II in BPD. *SSPR, New Orleans, LA, Feb 2014. SSPR Young Investigator Award finalist*

**Charitharth Vivek Lal, MD**, Niranjan Awasthi, PhD, Haiming Xu, PhD, Anna M Schwarz, Roderich E Schwarz, MD, Rashmin C Savani, MBChB and Margaret A Schwarz, MD. BPD: Role of EMAP II in BPD. *Research Day, Dept of Pediatrics, UTSW, Dallas, May 2012- Selected as one of the Top 5 Scientific Abstracts*

**Charitharth V. Lal**, Jie Liao, Naeun Cheong, Christopher Longoria, Alain Cuna, Ona M. Faye-Petersen, David R. Kelly, Namasivayam Ambalavanan, Rashmin C. Savani. CD44 is necessary for increased lung IL1Beta/TGFBeta and decreased alveolarization in mice exposed to hyperoxia and is elevated in preterm infant with BPD. *Platform Presentation, Pediatric Academic Society (PAS), Vancouver, Canada. SPR/PAS Travel Award*

Reina S. Mayor, Brenna Hill, Jordan Zehr, Michael Neinast, Eugenia Morselli, **Charitharth Vivek Lal**, Lisa Hahner, Rashmin Savani, Deborah Clegg. In utero exposure to maternal high fat diet increases fetal lung inflammation impairing lung development. *Platform Presentation, Pediatric Academic Society (PAS), Vancouver, Canada, 2014*

**Charitharth V. Lal**, Nelida Olave, Namasivayam Ambalavanan. Mir219-5p in Bronchopulmonary Dysplasia. *Platform Presentation, Pediatric Academic Society (PAS), San Diego, CA 2015.*

### **Poster presentations**

**Charitharth Vivek Lal**, Preud'Homme, Vitamin D25(OH) level in an obese pediatric population does not correlate with markers of insulin resistance. *Poster presented at: Southern Regional Meetings; New Orleans, LA, February 2010*

**Charitharth Vivek Lal**, Zayek M. Early Use of Vasopressors - A Cause of Cerebellar Hemorrhage in Very Premature Infant *Poster presentation at AAP Meeting, San Francisco, CA, 10/1/2010*

**Charitharth Vivek Lal**, Zayek M. The use of vasopressors should be carefully balanced with the increased risk of Cerebellar Hemorrhage in the extremely premature infants. *Poster presentation at Southern Society of Pediatric Research (SSPR), New Orleans, LA, 2/17/2011*

E. Persad, **Charitharth Vivek Lal**, Haiming Xu, Michelle Jennings, Rashmin C. Savani, and Margaret A. Schwarz

Endothelial-Monocyte Activating Polypeptide II (EMAP II) is produced by epithelial cells and macrophages in Bronchopulmonary Dysplasia (BPD).

*Poster presentation at the American Thoracic Society (ATS) International Conference, San Francisco, 2012*

**Charitharth Vivek Lal, MD**, Joseph B Cantey, MD, Shawn Varghese, Lisa M Scheid, MD, Sylvia Trevino, Mambarambath Jaleel, MD and Pablo Sanchez, MD. Obtaining Blood Cultures (BC) in the Neonatal Intensive Care Unit (NICU): Central, Peripheral or Both?

*Poster presentation, Pediatric Academic Society (PAS), Washington DC, 2013*

**Charitharth V. Lal**, Nelida Olave, Namasivayam Ambalavanan.

Mir 219-5p in Bronchopulmonary Dysplasia.

*Poster Presentation, Extracellular Biomarker Summit, Boston, MA, 2015*

**Charitharth V. Lal**, Nelida Olave, Namasivayam Ambalavanan.

Mir219-5p in Bronchopulmonary Dysplasia.

*Poster Presentation, American Thoracic Society (ATS) International Conference, Denver, CO, 2015.*

**Charitharth V. Lal**, Nelida Olave, Trent Tipple, Namasivayam Ambalavanan.

Early Airway MicroRNA Signature is Predictive of Bronchopulmonary Dysplasia in Extremely Preterm Infants. *Poster Presentation, Gordon Conference, Lung Injury and Repair, NH, 2015.*

## **Book Chapters**

Neonatal Thrombosis : A Primer

**Charitharth Vivek Lal**, MD, Janna Journeycake, MD

Chapter in the online NICU epub manual – *NEOSOURCE* PMH, Dallas, TX, December 2011

Pulmonary Hypertension in BPD

**Charitharth Vivek Lal, MD**, Namasivayam Ambalavanan

*Book - Bronchopulmonary Dysplasia*, edited by Dr. Bhandari, Springer Science and Business Media. *In Press, expected early 2016*

## **Editorial Board of Peer Reviewed Journals:**

*Journal of Neonatal Medicine and Pediatrics* – Editorial Board 2014 onwards

*Frontiers in Pediatrics* – Review Editor, Neonatology 2015 onwards