




Cristina Maria Alvira

Associate Professor of Pediatrics (Critical Care)

Pediatrics - Critical Care

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICES

• Pediatric Intensive Care

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ACADEMIC CONTACT INFORMATION

• Administrative Contact

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Bio

BIO

Dr. Alvira is an Associate Professor of Pediatrics in the Division of Critical Care Medicine, the Crandall Endowed Faculty Scholar in Pediatric Pulmonary Medicine, the Associate Director of Basic Research for the Stanford Center for Excellence in Pulmonary Biology and the Director of the Stanford Department of Pediatrics Physician Scientist Bridge to K Program. Dr. Alvira leads an NIH-funded basic research program that investigates the molecular mechanisms regulating postnatal lung growth, repair and regeneration using genetic gain and loss of function, single cell transcriptomics and advanced imaging. Current projects include delineating the role of a unique embryonic macrophage population in regulating pulmonary vascular development (R01 HL155828), defining pulmonary endothelial cell heterogeneity at single cell resolution during development and in response to injury (R01 HL154002), and investigating the role of a novel calcium channel in regulating myometrial contractility and contributing to preterm birth (R01 HD092316). In addition to her research, Dr. Alvira is dedicated to mentorship and the career development of the next generation of physician-scientists. Locally, Dr. Alvira serves as a Mentor of the Stanford T32 Research Training Fellowship in Lung Biology and the K12 Women's Reproductive Health Research at Stanford Program. Nationally, Dr. Alvira has served on the Council for the Society for Pediatric Research (SPR), is currently a Cohort Leader for the APS/SPR Journeys in Research Program, and a Co-Lead for the SPR Grant Writing 101 Program.

CLINICAL FOCUS

- Intensive Care, Pediatric
- Pediatric Critical Care Medicine

ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Pediatrics - Critical Care
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Member, Society for Pediatric Research, (2012- present)
- Editorial Board, American Journal of Physiology-Lung, Cellular and Molecular Physiology, (2014- present)

- Associate Director of Basic Research, Stanford University Center for Excellence in Pulmonary Biology, (2016- present)
- Council Member, Society for Pediatric Research, (2018-2021)
- Director, Stanford Department of Pediatrics Bridge to K Program, (2019- present)

HONORS AND AWARDS

- Member, Alpha Omega Alpha National Honor Society (1998)
- Excellence in Clinical Medicine, Louis Weinstein Prize (1999)
- Travel Award, Western Society for Clinical Investigation (2004)
- Travel Award, Society for Pediatric Research (2004)
- Pediatric Clerkship Honor Roll for Teaching, Lucile Packard Children's Hospital at Stanford (2007)
- Fellow to Faculty Transition Grant, American Heart Association (2008-2013)
- Young Investigator Coaching Program, Society for Pediatric Research (2012)
- Outstanding Junior Investigator Award, American Journal of Physiology-Lung Molecular and Cellular Physiology (2013)
- Tashia and John Morgridge Faculty Scholar in Pediatric Translational Medicine, Stanford Child Health Research Institute (2015-2020)
- Crandall Endowed Faculty Scholar in Pediatric Pulmonary Medicine, Stanford University School of Medicine (2021-)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Society for Pediatric Research (2012 - present)
- Member, American Physiological Society (2016 - present)

PROFESSIONAL EDUCATION

- Residency: Stanford Health Care at Lucile Packard Children's Hospital (2002) CA
- Internship: Stanford Health Care at Lucile Packard Children's Hospital (2000) CA
- Medical Education: Tufts University School of Medicine (1999) MA
- Fellowship: Stanford University Pediatric Critical Care Fellowship (2005) CA
- Board Certification: Pediatric Critical Care Medicine, American Board of Pediatrics (2006)
- MD, Tufts University , Medicine (1999)
- BS, Tufts University , Biology (1995)

LINKS

- Alvira Lab Website: <http://alviralab.stanford.edu/>
- Stanford Pediatrics Bridge to K Program: <https://med.stanford.edu/pediatrics/research/bridgetok.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Secondary septation, the process that marks the alveolar phase of lung development, involves the coordinated activities of multiple different cell types within the lung. Secretion of extracellular matrix components, proliferation and migration of myofibroblasts and epithelial cells, and pulmonary capillary angiogenesis, have been identified as key players in this process. However, in contrast to the identification of multiple transcription factors controlling branching morphogenesis during the early stages of lung development, the regulators that control and coordinate the individual components of alveolarization remain unknown. The nuclear factor kappa-B (NFkB) family of transcription factors plays a key role in regulating cell survival, differentiation, and inflammation, however, a role in lung development has not been previously identified. A main focus of our work is to define a novel function for NFkB in regulating postnatal lung development using mouse models and primary cell lines.

Postnatal pulmonary angiogenesis is essential for alveolarization. We have recently demonstrated a high degree of constitutive NF κ B signaling in primary pulmonary endothelial cells (PEC) isolated from neonatal mice as compared to those isolated from adult mice. Furthermore, inhibiting constitutive NF κ B activity in the neonatal PEC with either pharmacologic inhibitors or RNA interference, blocked PEC survival, decreased proliferation, and impaired in vitro angiogenesis. In this project we are utilizing RNAi to block the individual components of the NF κ B pathway, gene expression analysis, and endothelial specific conditional knock-out mice in order to identify novel NF κ B mediated targets that are essential for postnatal pulmonary angiogenesis.

In a separate but related project, we are exploring pathways which help to preserve normal lung development in the setting of lung injury. Both local and systemic infections can injure the lung. Clinical and experimental evidence suggests that unique pathways may exist that serve to protect the immature lung from severe inflammation, and potentially allow for a greater regeneration after injury. Using a murine model of acute respiratory distress syndrome induced by the administration of systemic lipopolysaccharide, we are exploring the molecular mechanisms that serve to protect the lung against injury, and identify how these mechanisms are distinct in immature and mature animals. We believe that the information learned from these studies will be clinically relevant to a broad number of pulmonary diseases including bronchopulmonary dysplasia, asthma, ARDS, and emphysema.

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Rebecca Zhang

Publications

PUBLICATIONS

- **Transforming Growth Factor Induced Protein Promotes NF-Kappa-B Mediated Angiogenesis During Postnatal Lung Development.** *American journal of respiratory cell and molecular biology*
Liu, M., Iosef, C., Rao, S., Domingo-Gonzalez, R., Fu, S., Snider, P., Conway, S. J., Umbach, G. S., Heilshorn, S. C., Dewi, R. E., Dahl, M. J., Null, D. M., Albertine, et al
2020
- **Diverse homeostatic and immunomodulatory roles of immune cells in the developing mouse lung at single cell resolution.** *eLife*
Domingo-Gonzalez, R., Zanini, F., Che, X., Liu, M., Jones, R. C., Swift, M. A., Quake, S. R., Cornfield, D. N., Alvira, C. M.
2020; 9
- **Enhancing the Development and Retention of Physician-Scientists in Academic Pediatrics: Strategies for Success** *JOURNAL OF PEDIATRICS*
Alvira, C. M., Steinhorn, R. H., Balistreri, W. F., Fineman, J. R., Oishi, P. E., Padbury, J. F., Kinsella, J. P., Abman, S. H.
2018; 200: 277-84
- **The transient receptor potential vanilloid 4 channel modulates uterine tone during pregnancy** *SCIENCE TRANSLATIONAL MEDICINE*
Ying, L., Becard, M., Lyell, D., Han, X., Shortliffe, L., Husted, C. I., Alvira, C. M., Cornfield, D. N.
2015; 7 (319)
- **Activation of the nuclear factor- κ B pathway during postnatal lung inflammation preserves alveolarization by suppressing macrophage inflammatory protein-2.** *American journal of physiology. Lung cellular and molecular physiology*
Hou, Y., Liu, M., Husted, C., Chen, C., Thiagarajan, K., Johns, J. L., Rao, S. P., Alvira, C. M.
2015; 309 (6): L593-604
- **Inhibiting NF-kappa B in the developing lung disrupts angiogenesis and alveolarization** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Iosef, C., Alastalo, T., Hou, Y., Chen, C., Adams, E. S., Lyu, S., Cornfield, D. N., Alvira, C. M.
2012; 302 (10): L1023-L1036

- **Nuclear factor-kappa B activation in neonatal mouse lung protects against lipopolysaccharide-induced inflammation** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE*
Alvira, C. M., Abate, A., Yang, G., Dennerly, P. a., Rabinovitch, M.
2007; 175 (8): 805-815
- **Macrophage-derived IL-6 trans-signaling as a novel target in the pathogenesis of bronchopulmonary dysplasia.** *The European respiratory journal*
Hirani, D., Alvira, C. M., Danopoulos, S., Milla, C., Donato, M., Tian, L., Mohr, J., Dinger, K., Vohlen, C., Selle, J., Koningsbruggen-Rietschel, S. V., Barbarino, V., Pallasch, et al
2021
- **Micro-RNA 203 Regulates Myometrial Smooth Muscle Cell Expression of the Transient Receptor Vanilloid 4 Channel and Contractility.**
Ying, L., Alvira, C. M., Cornfield, D. N.
SPRINGER HEIDELBERG.2021: 122A
- **Dynamism of the Human Lung Proteome During Alveolarization: Moving Beyond the Transcriptome.** *American journal of respiratory and critical care medicine*
Alvira, C. M.
2021
- **Dynamic MicroRNA 203 Expression Regulates Myometrial Smooth Muscle Cell Transient Receptor Vanilloid 4 Channel Expression During Pregnancy.**
Ying, L., Ingles, J. A., Alvira, C. M., Cornfield, D. N.
SPRINGER HEIDELBERG.2020: 68A
- **Extracellular Calcium Entry via the TRPV4 Channel Potentiates NF kappa B Activation in the Myometrium.**
Ingles, J. A., Rodriguez, S., Ying, L., Cornfield, D. N., Alvira, C. M.
SPRINGER HEIDELBERG.2020: 109A
- **Nanoparticle Delivery of Angiogenic Gene Therapy: Save the Vessels, Save the Lung!** *American journal of respiratory and critical care medicine*
Zepp, J. A., Alvira, C. M.
2020
- **NF-kappaB/NKILA signaling modulates the anti-cancerous effects of EZH2 inhibition.** *Journal of cellular and molecular medicine*
Duan, S., Chan, W. K., Oman, A., Basile, D. P., Alvira, C. M., Buxton, I. L., Iosef, C.
2019
- **Loss of TPRV4 Attenuates NF kappa B Activation and Inflammation Thereby Decreasing Murine Susceptibility to LPS-Induced Preterm Labor.**
Ingles, J. A., Rodriguez, Z., Ying, L., Cornfield, D. N., Alvira, C. M.
SAGE PUBLICATIONS INC.2019: 110A
- **Intrauterine growth restriction decreases NF-kappa B signaling in fetal pulmonary artery endothelial cells of fetal sheep** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Dodson, R., Powers, K. N., Gien, J., Rozance, P. J., Seedorf, G., Astling, D., Jones, K., Crombleholme, T. M., Abman, S. H., Alvira, C. M.
2018; 315 (3): L348-L359
- **Distinct roles for I#B kinases alpha and beta in regulating pulmonary endothelial angiogenic function during late lung development.** *Journal of cellular and molecular medicine*
Iosef, C., Liu, M., Ying, L., Rao, S. P., Concepcion, K. R., Chan, W. K., Oman, A., Alvira, C. M.
2018; 22 (9): 4410-4422
- **Pulmonary artery smooth muscle cell HIF-1 alpha regulates endothelin expression via microRNA-543** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Wang, C., Ying, L., Barnes, E. A., Adams, E. S., Kim, F. Y., Engel, K. W., Alvira, C. M., Cornfield, D. N.
2018; 315 (3): L422-L431
- **Pulmonary artery smooth muscle cell HIF-1alpha regulates endothelin expression via microRNA-543.** *American journal of physiology. Lung cellular and molecular physiology*
Wang, C., Ying, L., Barnes, E. A., Adams, E. S., Kim, F. Y., Engel, K. W., Alvira, C. M., Cornfield, D. N.
2018; 315 (3): L422-L431
- **beta 1-Subunit of the calcium-sensitive potassium channel modulates the pulmonary vascular smooth muscle cell response to hypoxia** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*

- Barnes, E. A., Lee, L., Barnes, S. L., Brenner, R., Alvira, C. M., Cornfield, D. N.
2018; 315 (2): L265–L275
- **Enhancing the Development and Retention of Physician-Scientists in Academic Pediatrics: Strategies for Success.** *The Journal of pediatrics*
Alvira, C. M., Steinhorn, R. H., Balistreri, W. F., Fineman, J. R., Oishi, P. E., Padbury, J. F., Kinsella, J. P., Abman, S. H.
2018
 - **Developmental differences in focal adhesion kinase expression modulate pulmonary endothelial barrier function in response to inflammation** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Ying, L., Alvira, C. M., Cornfield, D. N.
2018; 315 (1): L66–L77
 - **beta1 Subunit of the Calcium-Sensitive Potassium Channel Modulates the Pulmonary Vascular Smooth Muscle Cell Response to Hypoxia.** *American journal of physiology. Lung cellular and molecular physiology*
Barnes, E. A., Lee, L., Barnes, S. L., Brenner, R., Alvira, C. M., Cornfield, D. N.
2018
 - **Developmental Differences in Focal Adhesion Kinase Expression Modulate Pulmonary Endothelial Barrier Function in Response to Inflammation.** *American journal of physiology. Lung cellular and molecular physiology*
Ying, L., Alvira, C. M., Cornfield, D. N.
2018
 - **TRPV4 Promotes Myometrial Inflammation and Contractility in Preterm Mice Exposed to Low Dose Lipopolysaccharide.**
Rodriguez, Z., Ying, L., Cornfield, D. N., Alvira, C. M.
SAGE PUBLICATIONS INC.2018: 190A
 - **Distinct roles for I#B kinases alpha and beta in regulating pulmonary endothelial angiogenic function during late lung development** *Distinct roles for I#B kinases alpha and beta in regulating pulmonary endothelial angiogenic function during late lung development*
Josef, C., Liu, M., Ying, L., Rao, S., Concepcion, K., Chan, W., Oman, A., Alvira, C. M.
2018: 1-13
 - **Can We Understand the Pathobiology of Bronchopulmonary Dysplasia?** *JOURNAL OF PEDIATRICS*
Alvira, C. M., Morty, R. E.
2017; 190: 27–37
 - **Long-term miR-29b suppression reduces aneurysm formation in a Marfan mouse model.** *Physiological reports*
Okamura, H., Emrich, F., Trojan, J., Chiu, P., Dalal, A. R., Arakawa, M., Sato, T., Penov, K., Koyano, T., Pedroza, A., Connolly, A. J., Rabinovitch, M., Alvira, et al
2017; 5 (8)
 - **Long-term miR-29b suppression reduces aneurysm formation in a Marfan mouse model** *PHYSIOLOGICAL REPORTS*
Okamura, H., Emrich, F., Trojan, J., Chiu, P., Dalal, A. R., Arakawa, M., Sato, T., Penov, K., Koyano, T., Pedroza, A., Connolly, A. J., Rabinovitch, M., Alvira, et al
2017; 5 (8)
 - **Developmental Expression of Transforming Growth Factor Beta-Induced Protein in the Alveolar Lung Promotes Nuclear Factor Kappa-B Dependent Pulmonary Endothelial Migration**
Liu, M., Rao, S. P., Fu, S., Josef, C., Umbach, G., Alvira, C. M.
FEDERATION AMER SOC EXP BIOL.2017
 - **Micro-RNA 203 Regulates Myometrial Smooth Muscle Cell Expression of the Transient Receptor Vanilloid 4 Channel**
Ying, L., Barnes, E. A., Rodriguez, S., Alvira, C. M., Cornfield, D. N.
FEDERATION AMER SOC EXP BIOL.2017
 - **Absence of TNF-a enhances inflammatory response in the newborn lung undergoing mechanical ventilation.** *American journal of physiology. Lung cellular and molecular physiology*
Ehrhardt, H., Pritzke, T., Oak, P., Kossert, M., Biebach, L., Förster, K., Koschlig, M., Alvira, C. M., Hilgendorff, A.
2016; 310 (10): L909-18
 - **Absence of TNF-alpha enhances inflammatory response in the newborn lung undergoing mechanical ventilation** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*

Ehrhardt, H., Pritzke, T., Oak, P., Kossert, M., Biebach, L., Foerster, K., Koschlig, M., Alvira, C. M., Hilgendorff, A.
2016; 310 (10): L909-L918

- **A Role for the Transient Receptor Potential Vanilloid 4 Channel in Modulating Uterine Tone During Pregnancy**
Ying, L., Alvira, C. M., Cornfield, D. N.
FEDERATION AMER SOC EXP BIOL.2016
- **KCNMB1(-/-) Mice as a Model of Pulmonary Arterial Hypertension**
Barnes, E., Chen, C., Barnes, S., Kim, F., Lee, L., Alvira, C., Cornfield, D.
FEDERATION AMER SOC EXP BIOL.2016
- **KCNMB1(-/-) Mice as a Model of Pulmonary Arterial Hypertension**
Barnes, E., Chen, C., Barnes, S., Kim, F., Lee, L., Alvira, C., Cornfield, D.
FEDERATION AMER SOC EXP BIOL.2016
- **Loss of PPAR γ in endothelial cells leads to impaired angiogenesis.** *Journal of cell science*
Vattulainen-Collanus, S., Akinrinade, O., Li, M., Koskenvuo, M., Li, C. G., Rao, S. P., de Jesus Perez, V., Yuan, K., Sawada, H., Koskenvuo, J. W., Alvira, C., Rabinovitch, M., Alastalo, et al
2016; 129 (4): 693-705
- **Loss of PPAR gamma in endothelial cells leads to impaired angiogenesis** *JOURNAL OF CELL SCIENCE*
Vattulainen-Collanus, S., Akinrinade, O., Li, M., Koskenvuo, M., Li, C. G., Rao, S. P., Perez, V. D., Yuan, K., Sawada, H., Koskenvuo, J. W., Alvira, C., Rabinovitch, M., Alastalo, et al
2016; 129 (4): 693-705
- **Aberrant Pulmonary Vascular Growth and Remodeling in Bronchopulmonary Dysplasia.** *Frontiers in medicine*
Alvira, C. M.
2016; 3: 21-?
- **Activation of the nuclear factor- κ B pathway during postnatal lung inflammation preserves alveolarization by suppressing macrophage inflammatory protein-2.** *American journal of physiology. Lung cellular and molecular physiology*
Hou, Y., Liu, M., Husted, C., Chen, C., Thiagarajan, K., Johns, J. L., Rao, S. P., Alvira, C. M.
2015; 309 (6): L593-604
- **HIF-1 alpha Expression is Decreased and Contractility is Enhanced in PASMC from PAH Patients**
Barnes, E., Chen, C., Alvira, C., Cornfield, D.
FEDERATION AMER SOC EXP BIOL.2015
- **Differential Focal Adhesion Kinase (FAK) Expression Accounts for the Developmental Regulation of Pulmonary Artery Endothelial Cell(PAEC) Barrier Function**
Ying, L., Barnes, E., Alvira, C., Cornfield, D.
FEDERATION AMER SOC EXP BIOL.2015
- **Pulmonary artery smooth muscle cell endothelin-1 expression modulates the pulmonary vascular response to chronic hypoxia.** *American journal of physiology. Lung cellular and molecular physiology*
Kim, F. Y., Barnes, E. A., Ying, L., Chen, C., Lee, L., Alvira, C. M., Cornfield, D. N.
2015; 308 (4): L368-77
- **Pulmonary artery smooth muscle cell endothelin-1 expression modulates the pulmonary vascular response to chronic hypoxia** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Kim, F. Y., Barnes, E. A., Ying, L., Chen, C., Lee, L., Alvira, C. M., Cornfield, D. N.
2015; 308 (4): L368-L377
- **Enhanced Caspase Activity Contributes to Aortic Wall Remodeling and Early Aneurysm Development in a Murine Model of Marfan Syndrome** *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY*
Emrich, F. C., Okamura, H., Dalal, A. R., Penov, K., Merk, D. R., Raaz, U., Hennigs, J. K., Chin, J. T., Miller, M. O., Pedroza, A. J., Craig, J. K., Koyano, T. K., Blankenberg, et al
2015; 35 (1): 146-154
- **Disrupted lung development and bronchopulmonary dysplasia: opportunities for lung repair and regeneration.** *Current opinion in pediatrics*
Baker, C. D., Alvira, C. M.

2014; 26 (3): 306-314

- **Nuclear factor-kappa-B signaling in lung development and disease: One pathway, numerous functions.** *Birth defects research. Part A, Clinical and molecular teratology*
Alvira, C. M.
2014; 100 (3): 202-216
- **Chronic Lung Disease in the Preterm Infant Lessons Learned from Animal Models** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY*
Hilgendorff, A., Reiss, I., Ehrhardt, H., Eickelberg, O., Alvira, C. M.
2014; 50 (2): 233-245
- **Haemophagocytic lymphohistiocytosis associated with coccidiomycosis.** *BMJ case reports*
Ramsi, M., Alvira, C., Purohit, P., Cornfield, D.
2014; 2014
- **Peroxisome Proliferator-Activated Receptor Gamma-Deficiency in Endothelial Cells Leads to Impaired Angiogenesis**
Vattulainen, S., Koskenvuo, M. M., Li, C., Li, M., Perez, V., Alvira, C., Sawada, H., Koskenvuo, J. W., Rabinovitch, M., Alastalo, T.
LIPPINCOTT WILLIAMS & WILKINS.2013
- **Apoptosis Participates in Early Aneurysm Development via ECM Remodeling in Marfan Syndrome**
Emrich, F. C., Okamura, H., Dalal, A. R., Merk, D. R., Raaz, U., Hennigs, J. K., Chin, J. T., Miller, M. O., Blankenberg, F. G., Connolly, A. J., Alvira, C. M., Mohr, F. W., Robbins, et al
LIPPINCOTT WILLIAMS & WILKINS.2013
- **Hypoxia-inducible factor-1a in pulmonary artery smooth muscle cells lowers vascular tone by decreasing myosin light chain phosphorylation.** *Circulation research*
Kim, Y., Barnes, E. A., Alvira, C. M., Ying, L., Reddy, S., Cornfield, D. N.
2013; 112 (9): 1230-1233
- **Hypoxia-inducible factor-1a in pulmonary artery smooth muscle cells lowers vascular tone by decreasing Myosin light chain phosphorylation.** *Circulation research*
Kim, Y., Barnes, E. A., Alvira, C. M., Ying, L., Reddy, S., Cornfield, D. N.
2013; 112 (9): 1230-1233
- **Voltage-Dependent Anion Channel-2 Interaction with Nitric Oxide Synthase Enhances Pulmonary Artery Endothelial Cell Nitric Oxide Production** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY*
Alvira, C. M., Umesh, A., Husted, C., Ying, L., Hou, Y., Lyu, S., Nowak, J., Cornfield, D. N.
2012; 47 (5): 669-678
- **Hypoxia-inducible factor-1 alpha regulates KCNMB1 expression in human pulmonary artery smooth muscle cells** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Ahn, Y., Kim, Y., Adams, E., Lyu, S., Alvira, C. M., Cornfield, D. N.
2012; 302 (3): L352-L359
- **miR-29b Participates in Early Aneurysm Development in Marfan Syndrome** *CIRCULATION RESEARCH*
Merk, D. R., Chin, J. T., Dake, B. A., Maegdefessel, L., Miller, M. O., Kimura, N., Tsao, P. S., Iosef, C., Berry, G. J., Mohr, F. W., Spin, J. M., Alvira, C. M., Robbins, et al
2012; 110 (2): 312-?
- **Neutrophil Elastase Is Produced by Pulmonary Artery Smooth Muscle Cells and Is Linked to Neointimal Lesions** *AMERICAN JOURNAL OF PATHOLOGY*
Kim, Y., Haghghat, L., Spiekerkoetter, E., Sawada, H., Alvira, C. M., Wang, L., Acharya, S., Rodriguez-Colon, G., Orton, A., Zhao, M., Rabinovitch, M.
2011; 179 (3): 1560-1572
- **Inhibition of Transforming Growth Factor beta Worsens Elastin Degradation in a Murine Model of Kawasaki Disease** *AMERICAN JOURNAL OF PATHOLOGY*
Alvira, C. M., Guignabert, C., Kim, Y., Chen, C., Wang, L., Duong, T. T., Yeung, R. S., Li, D. Y., Rabinovitch, M.
2011; 178 (3): 1210-1220
- **Rho kinase modulates postnatal adaptation of the pulmonary circulation through separate effects on pulmonary artery endothelial and smooth muscle cells** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Alvira, C. M., Sukovich, D. J., Lyu, S., Cornfield, D. N.

2010; 299 (6): L872-L878

- **Prolonged mechanical ventilation with air induces apoptosis and causes failure of alveolar septation and angiogenesis in lungs of newborn mice** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Mokres, L. M., Parai, K., Hilgendorff, A., Ertsey, R., Alvira, C. M., Rabinovitch, M., Bland, R. D.
2010; 298 (1): L23-L35
- **Tie2-mediated loss of peroxisome proliferator-activated receptor-gamma in mice causes PDGF receptor-beta-dependent pulmonary arterial muscularization** *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY*
Guignabert, C., Alvira, C. M., Alastalo, T., Sawada, H., Hansmann, G., Zhao, M., Wang, L., El-Bizri, N., Rabinovitch, M.
2009; 297 (6): L1082-L1090
- **Increased expression of transient receptor vanilloid channels during pregnancy regulates uterine smooth muscle cell calcium entry and contraction**
Becard, M., Lyu, S., Alvira, C., Adams, E., Umesh, A., Cornfield, D.
MOSBY-ELSEVIER.2009: S251
- **Nuclear Factor Kappa B Mediates Postnatal Alveolarization by Promoting Pulmonary Angiogenesis via Vascular Endothelial Growth Factor Receptor-2 Regulation** *82nd National Conference and Exhibitions and Scientific Sessions of the American-Heart-Association*
Alvira, C. M., Alastalo, T. P., Chen, C., Lyu, S., Ahn, Y., Cornfield, D. N.
LIPPINCOTT WILLIAMS & WILKINS.2009: S1090-S1090
- **LC3-mediated fibronectin mRNA translation induces fibrosarcoma growth by increasing connective tissue growth factor** *JOURNAL OF CELL SCIENCE*
Ying, L., Lau, A., Alvira, C. M., West, R., Cann, G. M., Zhou, B., Kinnear, C., Jan, E., Sarnow, P., van de Rijn, M., Rabinovitch, M.
2009; 122 (9): 1441-1451
- **Tie2-Mediated Loss of Peroxisome Proliferator-Activated Receptor-gamma in Transgenic Mice Increases Platelet Derived Growth Factor-Receptor beta and Pulmonary Arterial Muscularization** *81st Annual Scientific Session of the American-Heart-Association*
Guignabert, C., Alvira, C. M., Alastalo, T., Sawada, H., Perrez, V. D., Hansmann, G., Zhao, M., Wang, L., El-Bizri, N., Rabinovitch, M.
LIPPINCOTT WILLIAMS & WILKINS.2008: S307-S307
- **Transforming Growth Factor Beta Inhibition Increases Matrix Metalloproteinase-9 Activity and Enhances Elastin Degradation in a Murine Model of Kawasaki Disease**
Alvira, C. M., Kim, Y., Guignabert, C., Wang, L., Rabinovitch, M.
LIPPINCOTT WILLIAMS & WILKINS.2008: S373
- **An antiproliferative BMP-2/PPAR gamma/apoE axis in human and murine SMCs and its role in pulmonary hypertension** *JOURNAL OF CLINICAL INVESTIGATION*
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