




## Mark Nicolls

Stanford University Professor of Pulmonary and Critical Care Medicine  
Medicine - Pulmonary, Allergy & Critical Care Medicine

 NIH Biosketch available Online

### CLINICAL OFFICE (PRIMARY)

- **Chest Clinic**

300 Pasteur Dr Rm A157

MC 5351

Stanford, CA 94305

**Tel** (650) 725-7061

**Fax** (650) 498-6288

### ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Yvette Sanchez - Administrative Associate

**Email** [yvette88@stanford.edu](mailto:yvette88@stanford.edu)

**Tel** 650-721-3068

## Bio

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### BIO

Dr. Mark Nicolls specializes in the treatment of lung transplant patients. He has practiced pulmonary and critical care medicine for 20 years. Dr.

Nicolls has a special interest in how the immune system contributes to vascular disease and has a basic science laboratory which focuses on lung transplantation, pulmonary hypertension, and lymphedema. More recently, our group is incorporating the study of embryologic lung development to help explain adult pulmonary disease.

### CLINICAL FOCUS

- Pulmonary Critical Care
- Lung Transplantation
- Heart-Lung Transplantation
- Transplantation Immunology
- Pulmonary Hypertension
- Pulmonary Disease
- Lymphedema

### ACADEMIC APPOINTMENTS

- Professor, Medicine - Pulmonary, Allergy & Critical Care Medicine
- Member, Cardiovascular Institute
- Member, CVI/Vera Moulton Wall Center
- Member, Maternal & Child Health Research Institute (MCHRI)

### ADMINISTRATIVE APPOINTMENTS

- Director, Lung Immunology, (2007- present)
- Faculty, Vera Moulton Wall Center For Pulmonary Vascular Disease, (2007- present)

- Joint Appointment, Immunology & Rheumatology, (2007- present)
- Member, Institute for Immunity, Transplantation and Infection, (2007- present)
- Member, Stanford Cardiovascular Institute, (2007- present)
- Program Director, Pulmonary and Critical Care Fellowship, (2009-2010)
- Chief, Pulmonary, Allergy and Critical Care Medicine, (2010- present)
- Chairman of the Board, Palo Alto Veterans Administration Institute for Research, (2015-2021)
- Medical Director, Pulmonary, Allergy & Critical Care Medicine Service Line, Stanford Health Care, (2018- present)
- Associate Dean for Research, Stanford University School of Medicine, (2023- present)

## HONORS AND AWARDS

- Elected Member, The American Society for Clinical Investigation (2014-)
- Endowed Chair, The Stanford Professor of Pulmonary and Critical Care Medicine, Stanford University (2016-)
- Elected Member, Association of American Physicians (2020-)
- Dickinson Richards Lecture, American Heart Association (2021)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Executive Committee, Stanford Cardiovascular Institute (2010 - present)
- Steering Committee - Vera Moulton Wall Center for Pulmonary Vascular Disease, Stanford University School of Medicine (2007 - present)

## PROFESSIONAL EDUCATION

- Board Certification: Pulmonary Disease, American Board of Internal Medicine (2009)
- Residency: Stanford University Internal Medicine Residency (1996) CA
- Medical Education: Stanford University School of Medicine (1993) CA
- Fellowship: University of Colorado School of Medicine (1999) CO
- Board Certification, ABIM , Critical Care Medicine (1999)
- BS, University of Portland , Biology (1987)

## PATENTS

- Mark Nicolls, Gregg Semenza, Xinguo Jiang, Gundeep Dhillon, Jayakumar Rajadas, Geoffrey Gurtner. "United States Patent 10548860 HIF-1 modulator paint formation and uses thereof", Leland Stanford Junior University, VA Palo Alto, Johns Hopkins, Feb 4, 2020
- Preetha Jothimuthu, Mohammed Inayathullah Nazir Ahmed, Wen A. Tian, Jayakumar Rajadas, Mark Nicolls, JooChuan Ang. "United States Patent 10527577 Nanogrid electrochemical sensor for detection of biochemical species by electrochemical impedance spectroscopy", The Board of Trustees of the Leland Stanford Junior University, The United States of America as represented by the Department of Veteran Affairs (Washington DC), Jan 7, 2020
- Mark Nicolls, Stanley G. Rockson, Wen A. Tian, Xinguo Jiang, Jeanna Kim. "United States Patent 10500178 LTB4 inhibition to prevent and treat lymphedema", The Board of Trustees of the Leland Stanford Junior University, Dec 10, 2019
- Mark Nicolls, Gregg Semenza, Xinguo Jiang, Gundeep Dhillon, Jayakumar Rajadas, Geoffrey Gurtner. "United States Patent 10,220,009 HIF-1 Modulator Paint Formulation and Uses Thereof", Leland Stanford Junior University, VA, Johns Hopkins, Mar 5, 2019
- Mark Nicolls, Wen Tian, Jayakumar Rajadas. "United States Patent 9861601 Treatment of pulmonary arterial hypertension with leukotriene inhibitors.", Leland Stanford Junior University, VA Palo Alto, Jan 9, 2018
- Mark Nicolls, Xinguo Jiang, Geoffrey Gurtner, Gregg Semenza, Jayakumar Rajadas. "United States Patent 9763899 Iron chelators and use thereof for reducing transplant failure during rejection episodes.", Leland Stanford Junior University, VA, Johns Hopkins, Sep 19, 2017
- Mark Nicolls, Karl Kossen, Alan Cohen. "United States Patent 9682071 Methods for improving microvascular integrity.", Leland Stanford Junior University, Intermune Inc., Jun 20, 2017
- Mark Nicolls, Wen Tian, Jayakumar Rajadas. "United States Patent 9233089 Treatment of pulmonary hypertension with leukotriene inhibitors.", Leland Stanford Junior University, Jan 12, 2016

## LINKS

- Nicolls Lab website: <http://nicollslab.stanford.edu/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our lab focuses primarily on the contribution of the immune response to lung disease. We are specifically examining the contribution of inflammation to the development of vascular injury in transplantation, pulmonary hypertension and lymphedema.

### CLINICAL TRIALS

- Rituximab for Treatment of Systemic Sclerosis-Associated Pulmonary Arterial Hypertension (SSc-PAH), Not Recruiting

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Justine Ko, Seunghee Lee, Shaun Pienkos

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Immunology (Phd Program)

## Publications

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### PUBLICATIONS

- **CES1 Deficiency is Associated With Metabolic Reprogramming and Endothelial Dysfunction in Pulmonary Arterial Hypertension.** *American journal of respiratory and critical care medicine*  
Agarwal, S., Bankar, A., Heo, L., Mitra, A., Chakraborty, A., Liu, L., Huang, F., Swaminathan, G., Auer, N., Chelladurai, P., Guardado, E. S., Matos, J., Le, et al  
2026
- **Altered baseline immunological state and impaired immune response to SARS-CoV-2 mRNA vaccination in lung transplant recipients.** *Cell reports. Medicine*  
Hu, M., Oliveira, A. P., Fang, Z., Feng, Y., Miranda, M., Kowli, S., Arunachalam, P. S., Vasudevan, G., Hui, H. S., Grifoni, A., Sette, A., Litvack, M., Rouphael, et al  
2025: 102050
- **A Cross-Species and Sex-Specific Meta-Analysis of Transcriptomic Studies of Pulmonary Hypertension.** *American journal of respiratory cell and molecular biology*  
Zhao, L., Cunningham, C. M., Hong, J., Agarwal, S., Yuan, K., de Jesus Perez, V. A., Nicolls, M. R.  
2025
- **Microbiome-Immune Interaction in Pulmonary Arterial Hypertension: What Have We Missed?** *Research (Washington, D.C.)*  
Zhou, X., Tian, W., Gu, S., Rabinovitch, M., Nicolls, M. R., Snyder, M. P.  
2025; 8: 0669
- **Editorial: Regulatory T cells in immune-mediated diseases.** *Frontiers in immunology*  
Tran, G. T., Verma, N. D., Nicolls, M. R., Hall, B. M.  
2024; 15: 1537314
- **CT strain metrics allow for earlier diagnosis of bronchiolitis obliterans syndrome after hematopoietic cell transplant.** *Blood advances*  
Sharifi, H., Bertini, C. D., Alkhunaizi, M., Hernandez, M. P., Musa, Z., Borges, C., Turk, I., Bashoura, L., Dickey, B. F., Cheng, G. S., Yanik, G. A., Galban, C., Guo, et al  
2024

- **3D Imaging Reveals Complex Microvascular Remodeling in the Right Ventricle in Pulmonary Hypertension.** *Circulation research*  
Ichimura, K., Boehm, M., Andruska, A. M., Zhang, F., Schimmel, K., Bonham, S., Kabiri, A., Kheyfets, V. O., Ichimura, S., Reddy, S., Mao, Y., Zhang, T., Wang, et al  
2024
- **Ultrasound Neuromodulation of an Anti-Inflammatory Pathway at the Spleen Improves Experimental Pulmonary Hypertension.** *Circulation research*  
Zafeiropoulos, S., Ahmed, U., Bekiaridou, A., Jayaprakash, N., Mughrabi, I. T., Saleknezhad, N., Chadwick, C., Daytz, A., Kurata-Sato, I., Atish-Fregoso, Y., Carroll, K., Al-Abed, Y., Fudim, et al  
2024
- **CES1 Deficiency Is Associated With Endothelial Dysfunction and Metabolic Reprogramming in PAH**  
Agarwal, S., Heo, L., Chakraborty, A., West, J. D., Suresh, K., Nair, R. V., Nicolls, M. R., Morisseau, C., Hammock, B. D., Lafyatis, R. A., Kawut, S. M., Zamanian, R. T., Perez, et al  
AMER THORACIC SOC.2024
- **HIF2A Activation Reduces Pulmonary Angiogenesis and Promotes Vascular Remodeling in PAH by Suppressing Wnt7a Production in Pulmonary Endothelial Cells**  
Mitra, A., Yi, D., Agarwal, S., Tian, A., Jiang, X., Nicolls, M. R., Zhiyu, D., Perez, V.  
AMER THORACIC SOC.2024
- **VIEWING PULMONARY HYPERTENSION THROUGH A PEDIATRIC LENS.** *The European respiratory journal*  
Agarwal, S., Fineman, J., Cornfield, D. N., Alvira, C. M., Zamanian, R. T., Goss, K., Yuan, K., Bonnet, S., Boucherat, O., Pullamsetti, S., Alcázar, M. A., Goncharova, E., Kudryashova, et al  
2024
- **B cells in pulmonary arterial hypertension: friend, foe or bystander?** *The European respiratory journal*  
Sanges, S., Tian, W., Dubucquoi, S., Chang, J. L., Collet, A., Launay, D., Nicolls, M. R.  
2024
- **Rat microbial biogeography and age-dependent lactic acid bacteria in healthy lungs.** *Lab animal*  
Zhao, L., Cunningham, C. M., Andruska, A. M., Schimmel, K., Ali, M. K., Kim, D., Gu, S., Chang, J. L., Spiekerkoetter, E., Nicolls, M. R.  
2024; 53 (2): 43-55
- **Pericytes contribute to pulmonary vascular remodeling via HIF2 $\alpha$  signaling.** *EMBO reports*  
Kim, H., Liu, Y., Kim, J., Kim, Y., Klouda, T., Fisch, S., Baek, S. H., Liu, T., Dahlberg, S., Hu, C. J., Tian, W., Jiang, X., Kosmas, et al  
2024
- **Single-Cell Imaging Maps Inflammatory Cell Subsets to Pulmonary Arterial Hypertension Vasculopathy.** *American journal of respiratory and critical care medicine*  
Ferrian, S., Cao, A., McCaffrey, E. F., Saito, T., Greenwald, N. F., Nicolls, M. R., Bruce, T., Zamanian, R. T., Del Rosario, P., Rabinovitch, M., Angelo, M.  
2023
- **Abnormal Lymphatic Sphingosine-1-Phosphate Signaling Aggravates Lymphatic Dysfunction and Tissue Inflammation.** *Circulation*  
Kim, D., Tian, W., Wu, T. T., Xiang, M., Vinh, R., Chang, J. L., Gu, S., Lee, S., Zhu, Y., Guan, T., Schneider, E. C., Bao, E., Dixon, et al  
2023
- **Abnormal lymphatic S1P signaling aggravates lymphatic dysfunction and tissue inflammation.** *medRxiv : the preprint server for health sciences*  
Kim, D., Tian, W., Wu, T. T., Xiang, M., Vinh, R., Chang, J., Gu, S., Lee, S., Zhu, Y., Guan, T., Schneider, E. C., Bao, E., Dixon, et al  
2023
- **A Selective Leukotriene B4 Antagonist, Acebilustat, for Treatment of Outpatients With COVID-19 Disease: A Randomized, Double-blind, Placebo-controlled Phase 2 Trial**  
Levitt, J. E., Hedlin, H., Duong, S., Lu, D., Lee, J., Elkarra, N., Pinsky, B., Heffernan, E., Springman, E., Bonilla, H., Parsonnet, J., Zamanian, R. T., Langguth, et al  
AMER THORACIC SOC.2023
- **Using an Unsupervised Learning Ensemble to Identify and Evaluate PAH Immune Phenotypes Longitudinally During Disease Progression**  
Sweatt, A., Hedlin, H. K., Haddad, F., Lawrie, A., Desai, M., Khatri, P., Nicolls, M. R., Rabinovitch, M., Zamanian, R. T.

AMER THORACIC SOC.2023

- **Endotyping COPD: hypoxia-inducible factor-2 as a molecular "switch" between the vascular and airway phenotypes?** *European respiratory review : an official journal of the European Respiratory Society*  
Myronenko, O., Foris, V., Crnkovic, S., Olschewski, A., Rocha, S., Nicolls, M. R., Olschewski, H.  
2023; 32 (167)
- **Evaluation of acebilustat, a selective inhibitor of leukotriene B4 biosynthesis, for treatment of outpatients with mild-moderate COVID-19 disease: A randomized, double-blind, placebo- controlled Phase 2 trial.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*  
Levitt, J. E., Hedlin, H., Duong, S., Lu, D., Lee, J., Bunning, B., Elkarra, N., Pinsky, B. A., Heffernan, E., Springman, E., Moss, R. B., Bonilla, H. F., Parsonnet, et al  
2023
- **A p53-TLR3 axis ameliorates pulmonary hypertension by inducing BMPR2 via IRF3.** *iScience*  
Bhagwani, A. R., Ali, M., Piper, B., Liu, M., Hudson, J., Kelly, N., Bogamuwa, S., Yang, H., Londino, J. D., Bednash, J. S., Farkas, D., Mallampalli, R. K., Nicolls, et al  
2023; 26 (2): 105935
- **Decreasing ELK3 expression improves Bone Morphogenetic Protein Receptor 2 signaling and pulmonary vascular cell function in PAH.** *bioRxiv : the preprint server for biology*  
Ali, M. K., Zhao, L., Perez, V. d., Nicolls, M. R., Spiekerkoetter, E. F.  
2023
- **PTPN1 Deficiency Modulates BMPR2 Signaling and Induces Endothelial Dysfunction in Pulmonary Arterial Hypertension.** *Cells*  
Ali, M. K., Tian, X., Zhao, L., Schimmel, K., Rhodes, C. J., Wilkins, M. R., Nicolls, M. R., Spiekerkoetter, E. F.  
2023; 12 (2)
- **The Human Respiratory Microbiome: Current Understandings and Future Directions.** *American journal of respiratory cell and molecular biology*  
Zhao, L., Luo, J. L., Ali, M. K., Spiekerkoetter, E., Nicolls, M. R.  
2022
- **Biochemical, biophysical, and immunological characterization of respiratory secretions in severe SARS-CoV-2 infections.** *JCI insight*  
Kratochvil, M. J., Kaber, G., Demirdjian, S., Cai, P. C., Burgener, E. B., Nagy, N., Barlow, G. L., Popescu, M., Nicolls, M. R., Ozawa, M. G., Regula, D. P., Pacheco-Navarro, A. E., Yang, et al  
2022; 7 (12)
- **Endogenous Retroviral Elements Generate Pathologic Neutrophils in Pulmonary Arterial Hypertension.** *American journal of respiratory and critical care medicine*  
Taylor, S., Isobe, S., Cao, A., Contrepolis, K., Benayoun, B. A., Jiang, L., Wang, L., Melemenidis, S., Ozen, M. O., Otsuki, S., Shinohara, T., Sweatt, A. J., Kaplan, et al  
2022
- **The role of circular RNAs in pulmonary hypertension.** *The European respiratory journal*  
Ali, M. K., Schimmel, K., Zhao, L., Chen, C. K., Dua, K., Nicolls, M. R., Spiekerkoetter, E.  
2022
- **CES1 Deficiency Is Associated with Oxidative Stress Mediated Endoplasmic Reticulum/Mitochondrial Dysfunction in Pulmonary Endothelial Cells**  
Agarwal, S. S., Chakraborty, A., Shamskhov, E., Condon, D. F., Suresh, K., Rabinovitch, M., Nicolls, M. R., Perez, V.  
AMER THORACIC SOC.2022
- **Overexpression of Pericyte HIF2 alpha Exacerbates Hypoxia Induced Pulmonary Hypertension and Right Ventricular Hypertrophy**  
Kim, H., Liu, Y., Kim, J., Klouda, T., Hu, C., Tian, W., Jiang, X., Wu, J., Stenmark, K. R., Nicolls, M. R., De Jesus Perez, V., Raby, B. A., Yuan, et al  
AMER THORACIC SOC.2022
- **Divergent Roles of Lymphatic Endothelial Cell-Expressed Hypoxia-Inducible Factors in Airway Transplant Rejection**  
Mcquiston, A. S., Kim, D., Vihn, R., Schneider, E. C., Tian, W., Jiang, X., Nicolls, M. R.  
AMER THORACIC SOC.2022
- **Single-Cell RNA-seq Reveals Transcriptionally Convergent Pulmonary Endothelial Cells in an Inflammatory Model of Pulmonary Arterial Hypertension with BMPR2 Dysfunction**

Kim, D., Zhao, L., Wu, T., Vihn, R., Schneider, E., Cunningham, C. M., McQuiston, A. S., Kao, P. N., Jiang, X., Tian, A., Nicolls, M. R.  
AMER THORACIC SOC.2022

- **Biochemical, Biophysical, and Immunological Characterization of Respiratory Secretions in Severe SARS-CoV-2 (COVID-19) Infections.** *medRxiv : the preprint server for health sciences*  
Kratochvil, M. J., Kaber, G., Demirdjian, S., Cai, P. C., Burgener, E. B., Nagy, N., Barlow, G. L., Popescu, M., Nicolls, M. R., Ozawa, M. G., Regula, D. P., Pacheco-Navarro, A. E., Yang, et al  
2022
- **Exploring disease interrelationships in patients with lymphatic disorders: A single center retrospective experience.** *Clinical and translational medicine*  
Rockson, S. G., Zhou, X., Zhao, L., Hosseini, D. K., Jiang, X., Sweatt, A. J., Kim, D., Tian, W., Snyder, M. P., Nicolls, M. R.  
2022; 12 (4): e760
- **Hypoxia and Hypoxia-Inducible Factors in Lymphedema.** *Frontiers in pharmacology*  
Jiang, X., Tian, W., Kim, D., McQuiston, A. S., Vinh, R., Rockson, S. G., Semenza, G. L., Nicolls, M. R.  
2022; 13: 851057
- **The COVID-19 Outpatient Pragmatic Platform Study (COPPS): Study design of a multi-center pragmatic platform trial.** *Contemporary clinical trials*  
Bunning, B., Hedlin, H., Purington, N., Sundaram, V., Kapphahn, K., Weng, Y., Cunanan, K., Maldonado, Y., Singh, U., Khosla, C., O'Hara, R., Nicolls, M., Springman, et al  
2021: 106509
- **The inflammatory role of dysregulated IRS2 in pulmonary vascular remodeling under hypoxic conditions.** *American journal of physiology. Lung cellular and molecular physiology*  
Nakahara, M., Ito, H., Skinner, J. T., Lin, Q., Tamosiuniene, R., Nicolls, M. R., Keegan, A. D., Johns, R. A., Yamaji-Kegan, K.  
2021
- **Reply to: Multiple Manifestations of Systemic Sclerosis Affect Walk Distance.** *American journal of respiratory and critical care medicine*  
Zamanian, R. T., Pinckney, A., Domsic, R. T., Medsger, T., Keyes-Elstein, L., Sweatt, A. J., Welch, B., Goldmuntz, E., Nicolls, M. R., Chung, L., NIH ASC01 Study Group  
2021
- **The Kinetics of Lymphatic Dysfunction and Leukocyte Expansion in the Draining Lymph Node during LTB4 Antagonism in a Mouse Model of Lymphedema.** *International journal of molecular sciences*  
Cribb, M. T., Sestito, L. F., Rockson, S. G., Nicolls, M. R., Thomas, S. N., Dixon, J. B.  
2021; 22 (9)
- **Safety and Efficacy of B-Cell Depletion with Rituximab for the Treatment of Systemic Sclerosis Associated Pulmonary Arterial Hypertension: A Multi-center, Double-blind, Randomized, Placebo-controlled Trial.** *American journal of respiratory and critical care medicine*  
Zamanian, R. T., Badesch, D., Chung, L., Domsic, R. T., Medsger, T., Pinckney, A., Keyes-Elstein, L., D'Aveta, C., Spsychala, M., White, R. J., Hassoun, P. M., Torres, F., Sweatt, et al  
2021
- **Microvasculature in murine tracheal allografts after combined therapy with clopidogrel and everolimus.** *Interactive cardiovascular and thoracic surgery*  
Heim, C., Kuckhahn, A., Ramsperger-Gleixner, M., Nicolls, M. R., Weyand, M., Ensminger, S. M.  
2021
- **Donor-derived, cell-free DNA levels by next-generation targeted sequencing are elevated in allograft rejection after lung transplantation.** *ERJ open research*  
Khush, K. K., De Vlaminc, I., Luikart, H., Ross, D. J., Nicolls, M. R.  
2021; 7 (1)
- **Severe Pulmonary Arterial Hypertension is Characterized by Increased Neutrophil Elastase and Relative Elafin Deficiency.** *Chest*  
Sweatt, A. J., Miyagawa, K., Rhodes, C. J., Taylor, S., Del Rosario, P. A., Hsi, A., Haddad, F., Spiekerkoetter, E., Bental-Roof, M., Bland, R. D., Swietlik, E. M., Gräf, S., Wilkins, et al  
2021
- **Colorectal Cancer-Associated Microbiome Patterns and Signatures.** *Frontiers in genetics*  
Zhao, L., Cho, W. C., Nicolls, M. R.

1800; 12: 787176

- **The Role of Regulatory T Cells in Pulmonary Arterial Hypertension.** *Frontiers in immunology*  
Tian, W., Jiang, S. Y., Jiang, X., Tamosiuniene, R., Kim, D., Guan, T., Arsalane, S., Pasupneti, S., Voelkel, N. F., Tang, Q., Nicolls, M. R.  
2021; 12: 684657
- **Pulmonary Arterial Hypertension: Diagnosis, Treatment, and Novel Advances.** *American journal of respiratory and critical care medicine*  
Maron, B. A., Abman, S. H., Elliott, C. G., Frantz, R. P., Hopper, R. K., Horn, E. M., Nicolls, M. R., Shlobin, O. A., Shah, S. J., Kovacs, G. n., Olschewski, H. n., Rosenzweig, E. B.  
2021
- **Leukotrienes in Tumor-Associated Inflammation.** *Frontiers in pharmacology*  
Tian, W., Jiang, X., Kim, D., Guan, T., Nicolls, M. R., Rockson, S. G.  
2020; 11: 1289
- **Leukotrienes in Tumor-Associated Inflammation** *FRONTIERS IN PHARMACOLOGY*  
Tian, W., Jiang, X., Kim, D., Guan, T., Nicolls, M. R., Rockson, S. G.  
2020; 11
- **Endothelial HIF-2alpha as a Key Endogenous Mediator Preventing Emphysema.** *American journal of respiratory and critical care medicine*  
Pasupneti, S., Tian, W., Tu, A. B., Dahms, P., Granucci, E., Gandjeva, A., Xiang, M., Butcher, E., Semenza, G. L., Tuder, R., Jiang, X., Nicolls, M. R.  
2020
- **The Hallmarks of Severe Pulmonary Arterial Hypertension: The Cancer Hypothesis - Ten years later.** *American journal of physiology. Lung cellular and molecular physiology*  
Cool, C. D., Kuebler, W. M., Bogaard, H. J., Spiekerkoetter, E., Nicolls, M. R., Voelkel, N. F.  
2020
- **Decreased lymphatic HIF-2α accentuates lymphatic remodeling in lymphedema.** *The Journal of clinical investigation*  
Jiang, X. n., Tian, W. n., Granucci, E. J., Tu, A. B., Kim, D. n., Dahms, P. n., Pasupneti, S. n., Peng, G. n., Kim, Y. n., Lim, A. H., Espinoza, F. H., Cribb, M. n., Dixon, et al  
2020
- **From 2D to 3D: Promising Advances in Imaging Lung Structure.** *Frontiers in medicine*  
Klouda, T. n., Condon, D. n., Hao, Y. n., Tian, W. n., Lvova, M. n., Chakraborty, A. n., Nicolls, M. R., Zhou, X. n., Raby, B. A., Yuan, K. n.  
2020; 7: 343
- **Mural Cell SDF1 Signaling is Associated with the Pathogenesis of Pulmonary Arterial Hypertension.** *American journal of respiratory cell and molecular biology*  
Yuan, K. n., Liu, Y. n., Zhang, Y. n., Nathan, A. n., Tian, W. n., Yu, J. n., Sweatt, A. J., Condon, D. n., Chakraborty, A. n., Agarwal, S. n., Auer, N. n., Zhang, S. n., Wu, et al  
2020
- **Machine learning algorithms to differentiate among pulmonary complications after hematopoietic cell transplant.** *Chest*  
Sharifi, H. n., Lai, Y. K., Guo, H. n., Hoppenfeld, M. n., Guenther, Z. D., Johnston, L. n., Brondstetter, T. n., Chhatwani, L. n., Nicolls, M. R., Hsu, J. L.  
2020
- **IPSE, an abundant egg-secreted protein of the carcinogenic helminth Schistosoma haematobium, promotes proliferation of bladder cancer cells and angiogenesis.** *Infectious agents and cancer*  
Mbanefo, E. C., Agbo, C. T., Zhao, Y., Lamanna, O. K., Thai, K. H., Karinshak, S. E., Khan, M. A., Fu, C., Odegaard, J. I., Saltikova, I. V., Smout, M. J., Pennington, L. F., Nicolls, et al  
2020; 15: 63
- **Bone Morphogenetic Protein Receptor 2 Mutations Impair T Regulatory Cell Function and Promote Inflammation in Pulmonary Arterial Hypertension**  
Peng, G., Tian, A., Guan, T., Wu, T., Nicolls, M. R.  
AMER THORACIC SOC.2020
- **Single-Cell RNA-seq Analysis Reveals Endothelial Heterogeneity of Inflammation-Induced Pulmonary Arterial Hypertension Under Bmpr2 Dysfunction**  
Wu, T., Peng, G., Tian, A., Guan, T., Nicolls, M. R.

AMER THORACIC SOC.2020

- **Safety and Efficacy of B-cell Depletion with Rituximab for the Treatment of Systemic Sclerosis-associated Pulmonary Arterial Hypertension in a Multi-center NIH Clinical Trial**  
Nicolls, M., Badesch, D., Chung, L., Domsic, R., Medsger, T., Pinckney, A., Keyes-Elstein, L., D'Aveta, C., Spychala, M., White, R., Hassoun, P., Torres, F., Molitor, et al  
WILEY.2019
- **Late Breaking Abstract - Safety and efficacy of B-cell depletion with rituximab for the treatment of systemic sclerosis-associated pulmonary arterial hypertension**  
Zamanian, R., Badesch, D., Chung, L., Domsic, R., Medsger, T., Pinckney, A., Keyes-Elstein, L., D'Aveta, C., Spychala, M., White, J., Hassoun, P., Torres, F., Molitor, et al  
EUROPEAN RESPIRATORY SOC JOURNALS LTD.2019
- **Preservation of Microvascular Integrity in Murine Orthotopic Tracheal Allografts by Clopidogrel** *TRANSPLANTATION*  
Heim, C., Khan, M., von Silva-Tarouca, B., Kuckhahn, A., Stamminger, T., Ramsperger-Gleixner, M., Nicolls, M. R., Weyand, M., Ensminger, S. M.  
2019; 103 (5): 899–908
- **Inducible expression of immediate early genes is regulated through dynamic chromatin association by NF45/ILF2 and NF90/NF110/ILF3** *PLOS ONE*  
Wu, T., Shi, L., Lowe, A. W., Nicolls, M. R., Kao, P. N.  
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