# CURRICULUM VITAE
# UNIVERSITY OF CALIFORNIA, DAVIS

**ELENA GONCHAROVA, PhD, ATSF**

## BIOGRAPHICAL

**Business Address:** Division of Pulmonary, Critical Care and Sleep Medicine
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## EDUCATION and TRAINING

### GRADUATE:

| Dates Attended | Name and Location of Institution | Degree Received and Year | Discipline |
|---|---|---|---|
| 1988-1993 | Department of Biochemistry<br>Moscow Lomonosov State University<br>Moscow, Russia | MS, 1993 | Biology |
| 1996-2000 | Cardiology Research Center<br>Russian Academy of Sciences<br>Moscow, Russia | PhD, 2000 | Biology |

### POSTGRADUATE:

2001-2005 Biomedical Postdoctoral Training (Signal Transduction, Smooth Muscle Biology)
Pulmonary, Allergy, and Critical Care Division, University of Pennsylvania School of Medicine

## APPOINTMENTS and POSITIONS

**ACADEMIC:**

| Years Inclusive | Name and Location of Institution | Rank/Title |
|---|---|---|
| 1995-1996 | Laboratory of Molecular Endocrinology<br>Cardiology Research Center, Moscow, Russia | Junior Researcher |
| 2000-2001 | Laboratory of Cell Motility<br>Cardiology Research Center, Moscow, Russia | Researcher |
| 2005-2009 | Pulmonary, Allergy, and Critical Care Division<br>University of Pennsylvania School of Medicine | Research Associate |
| 2009-2013 | Pulmonary, Allergy and Critical Care Division<br>University of Pennsylvania School of Medicine, | Research Assistant<br>Professor of Medicine |
| 2013-2017 | Heart, Lung, Blood and Vascular Medicine Institute<br>Pulmonary, Allergy and Critical Care Division<br>University of Pittsburgh School of Medicine | Associate Professor<br>of Medicine |
| 2017-2020 | Heart, Lung, Blood and Vascular Medicine Institute<br>Pulmonary, Allergy and Critical Care Division<br>University of Pittsburgh School of Medicine | Associate Professor<br>of Medicine with<br>Tenure |
| 2015-2020 | Department of Bioengineering, University of Pittsburgh<br>School of Medicine | Associate Professor of<br>Bioengineering |
| 2015-2020 | University of Pittsburgh<br>Cellular & Molecular Pathology Graduate Program | Graduate Faculty |
| 2015-present | University of Pittsburgh<br>Institute for Clinical Research Education | Faculty |
| 2016-2020 | University of Pittsburgh/UPMC<br>Center for Pulmonary Vascular Biology and Medicine | Head of PH Basic<br>Research |
| 2018-2020 | Center for Vascular Signaling and Precision Medicine<br>Vascular Medicine Institute/University of Pittsburgh | Director |
| 2020-Present | Division of Pulmonary, Critical Care and Sleep Medicine<br>University of California Davis Health | Professor<br>with Tenure |
| 2020-Present | Pulmonary Vascular Disease Program | Director |

2021-Present Lung Center, University of California, Davis Co-Director

## MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

| Organization | Year |
|---|---|
| American Thoracic Society (ATS) | 2007-present |
| American Heart Association (AHA) | 2010-present |
| Pulmonary Vascular Research Institute | 2015-present |
| The American Society for Cell Biology | 2010 |
| Penn Cardiovascular Institute | 2011-2013 |
| Women IN Academic Leadership (WIN-AL) program | 2019-2020 |
| ATS International Conference Committee | 2019-2021 |
| New York Academy of Sciences | 2021-present |

## HONORS and AWARDS

| Title of Award | Year |
|---|---|
| Junior Scientist of Russia Fellowship Award, Russian Federation for Basic Research | 2001 |
| LAM Foundation Fellowship Award | 2005 |
| Parker B. Francis Fellowship Award | 2008 |
| ATS/LAM Foundation Research Award | 2008 |
| Gilead Sciences Research Scholars Award in Pulmonary Arterial Hypertension (PAH) | 2010 |
| American Lung Association Biomedical Research Award | 2011 |
| Department of Medicine Robert Austrian Award in Bench Research | 2012 |
| LAM Foundation Francis G. Byrnes Conference Award | 2013 |

University of Pittsburgh VMI-HVI Innovator Award 2014

Conferral of Tenure 2017

The AJRCCM Eminent Reviewer Award 2019

The ATS Fellow designation 2020

Recognition as an Expertscape Expert in Pulmonary Arterial Hypertension 2021

## PUBLICATIONS

### Research publications, peer reviewed

1. Stepanova V, Bobik A, Bibilashvily R, Belogurov A, Rybalkin I, Domogatsky S, Little PJ, **Goncharova E**, Tkachuk V.: Urokinase plasminogen activator induces smooth muscle cell migration: key role of growth factor-like domain. FEBS Letters 414(2): 471-474, 1997

2. Stepanova VV, **Goncharova EA**, Bibilashvili RSh, Tkachuk VA: The role of "growth" domain of urokinase in migration of smooth muscle cells Russ Fisiol Zh Im I M Sechenova 83(11-12): 158-167, 1997

3. **Goncharova EA**, Tkachuk VA, Ratner EI, Parfenova EV, Vorotnikov AV: The role of mitogen-activated protein kinases in stimulation of the smooth muscle cell migration by urokinase. Zh Evol Biokhim Fiziol 36(6): 569-75, 2000

4. **Goncharova EA**, Shirinsky VP, Shevelev AY, Marston SB, Vorotnikov AV: Actomyosin cross-linking by caldesmon in non-muscle cells. FEBS Letters 497(2-3): 113-117, 2001

5. **Goncharova EA**, Vorotnikov AV, Gracheva EO, Wang CL, Panettieri RA Jr, Stepanova VV, Tkachuk VA: Activation of p38 MAP-kinase and caldesmon phosphorylation are essential for urokinase-induced human smooth muscle cell migration. Biological Chemistry 383(1): 115-126, 2002

6. Irani C, **Goncharova EA**, Hunter DS, Walker CL, Panettieri RA, Krymskaya VP: Phosphatidylinositol 3-kinase but not tuberin is required for PDGF-induced cell migration. American Journal of Physiology - Lung Cellular and Molecular Physiology 282(4): L854-862, 2002

7. **Goncharova EA**, Ammit AJ, Irani C, Carroll RG, Eszterhas AJ, Panettieri RA, Krymskaya VP: PI3K is required for proliferation and migration of human pulmonary vascular smooth muscle cells. American Journal of Physiology - Lung Cellular and Molecular Physiology 283(2): L354-363, 2002

8. **Goncharova EA**, Goncharov DA, Eszterhas A, Hunter DS, Glassberg MK, Yeung RS, Walker CL, Noonan D, Kwiatkowski DJ, Chou MM, Panettieri RA Jr, Krymskaya VP.: Tuberin regulates p70 S6 kinase activation and ribosomal protein S6 phosphorylation. A role for the TSC2 tumor suppressor

gene in pulmonary lymphangioleiomyomatosis (LAM). Journal of Biological Chemistry 277(34): 30958-30967, 2002

9. **Goncharova EA**, Billington CK, Irani C, Vorotnikov AV, Tkachuk VA, Penn RB, Krymskaya VP, Panettieri RA Jr: Cyclic AMP-mobilizing agents and glucocorticoids modulate human smooth muscle cell migration. American Journal of Respiratory Cell and Molecular Biology 29(1): 19-27, 2003

10. Kazi AS, Lotfi S, **Goncharova EA**, Tliba O, Amrani Y, Krymskaya VP, Lazaar AL: Vascular endothelial growth factor-induced secretion of fibronectin is ERK dependent. American Journal of Physiology - Lung Cellular and Molecular Physiology 286(3): L539-545, 2004

11. **Goncharova E**, Goncharov D, Noonan D, Krymskaya VP: TSC2 modulates actin cytoskeleton and focal adhesion through TSC1-binding domain and the Rac1 GTPase. Journal of Cell Biology 167(6): 1171-1182, 2004

12. Krymskaya VP, **Goncharova EA**, Ammit AJ, Lim PN, Goncharov DA, Eszterhas A, Panettieri RA Jr: Src is necessary and sufficient for human airway smooth muscle cell proliferation and migration. The FASEB Journal 19(3): 428-430, 2005

13. **Goncharova EA**, Goncharov DA, Krymskaya VP.: Assays for in vitro monitoring of human airway smooth muscle (ASM) and human pulmonary arterial vascular smooth muscle (VSM) cell migration. Nature Protocols 1(6): 2933-2939, 2006

14**. Goncharova EA**, Lim P, Goncharov DA, Eszterhas A, Panettieri RA Jr, Krymskaya VP: Assays for in vitro monitoring of proliferation of human airway smooth muscle (ASM) and human pulmonary arterial vascular smooth muscle (VSM) cells. Nature Protocols 1(6): 2905-2908, 2006

15. **Goncharova EA***, Goncharov DA, Lim PN, Noonan D, Krymskaya VP: Modulation of cell migration and invasiveness by tumor suppressor TSC2 in lymphangioleiomyomatosis. American Journal of Respiratory Cell and Molecular Biology 34(4): 473-480, 2006; *corresponding author

16. **Goncharova EA***, Goncharov DA, Spaits M, Noonan DJ, Talovskaya E, Eszterhas A, Krymskaya VP: Abnormal growth of smooth muscle-like cells in lymphangioleiomyomatosis: Role for tumor suppressor TSC2. American Journal of Respiratory Cell and Molecular Biology 34(5): 561-572, 2006, *corresponding author

17. **Goncharova EA***, Goncharov DA, Chisolm A, Spaits MS, Lim PN, Cesarone G, Khavin I, Tliba O, Amrani Y, Panettieri RA, Krymskaya VP: Interferon beta augments TSC2-dependent inhibition of TSC2-null ELT3 and human LAM-derived cell proliferation. Molecular Pharmacology 73(3): 778-788, 2008, *corresponding author

18. Damera G, Fogle H, Lim P, **Goncharova E**, Zhao H, Banerjee A, Tliba O, Krymskaya V, Panettieri R, Jr: Vitamin D inhibits human airway smooth muscle growth through growth factor-induced phosphorylation of retinoblastoma protein and checkpoint kinase 1. British Journal of Pharmacology 158(6): 1429-1441, 2009

19. **Goncharova EA***, Goncharov DA, Damera G, Tliba O, Amrani Y, Panettieri RA, Krymskaya VP: STAT3 is required for abnormal proliferation and survival of TSC2-deficient cells: relevance to pulmonary LAM. Molecular Pharmacology 76(4): 766-777, 2009, *corresponding author

20. **Goncharova EA**, Lim PN, Chisolm A, Fogle HW III, Taylor JH, Goncharov DA, Eszterhas A, Panettieri RA, Jr, Krymskaya VP : Interferons Modulate Mitogen-Induced Protein Synthesis in Airway Smooth Muscle (ASM) American Journal of Physiology - Lung Cellular and Molecular Physiology 299: L25-L35, 2010

21. **Goncharova EA**, Goncharov DA, Li H, Pimtong W, Lu S, Khavin I, Krymskaya VP: mTORC2 is Required for Proliferation and Survival of TSC2-Null Cells. Molecular and Cellular Biology 31(12): 2484-2498, 2011

22. Krymskaya VP, Snow J, Cesarone G, Khavin I, Goncharov DA, Lim PN, Veasey SC, Ihida-Stansbury K, Jones PL, **Goncharova EA***: mTOR is Required for Pulmonary Arterial Vascular Smooth Muscle Cell Proliferation Under Chronic Hypoxia. The FASEB Journal 25(6): 1922-1933, 2011, *corresponding author

23. **Goncharova EA**, Goncharov DA, Zhao H, Penn RB, Krymskaya VP, Panettieri RA, Jr: b2AR Agonists Modulate Human Airway Smooth Muscle Cell Migration Via VASP. American Journal of Respiratory Cell and Molecular Biology 46: 48-54, 2012

24. Koziol-White CJ, **Goncharova EA**, Cao G, Krymskaya VP, Panettieri RA, Jr: DHEA-S inhibits human neutrophil and airway smooth muscle migration. Biochimica et Biophysica Acta 1822: 1638-1642, 2012

25. **Goncharova EA**, Goncharov DA, Fehrenbach M, Khavin I, Ducka B, Hino O, Colby TV, Merrilees MJ, Haczku A, Albelda SM, Krymskaya VP: Prevention of Alveolar Destruction and Airspace Enlargement in a Mouse Model of Pulmonary Lymphangioleiomyomatosis (LAM) Science Translational Medicine 4(154): 154ra134, 2012

26. **Goncharova EA***, Khavin IS, Goncharov DA, Krymskaya VP: Differential effects of formoterol on thrombin- and PDGF-induced proliferation of human pulmonary arterial vascular smooth muscle cells. Respiratory Research 13: 109, 2012, *corresponding author

27. Medvetz DA, Khabibullin D, Hariharan V, Ongusaha PP, **Goncharova EA**, Priolo C, Darling TN, Hofmann I, Wu IC, Krymskaya VP, Liao JK, Huang H, Henske EP: Folliculin, the product of the Birt-Hogg-Dube tumor suppressor gene, interacts with the adherens junction protein p0071 to regulate cell-cell adhesion. PlosOne 7(11): e47842, 2012

28. Goncharov DA, Kudryashova TV, Ziai H, Ihida-Stansbury K, DeLisser H, Krymskaya VP, Tuder RM, Kawut SM, **Goncharova EA***: mTORC2 coordinates pulmonary artery smooth muscle cell metabolism, proliferation and survival in pulmonary arterial hypertension. Circulation, 129(8):864-74, 2014, *corresponding author

29. **Goncharova EA**, Goncharov DA, James ML, Atochina-Vasserman EN, Stepanova V, Hong S-B, Li H, Gonzales L, Baba M, Linehan WM, Gow AJ, Margulies S, Guttentag S, Schmidt L, Krymskaya VP: Folliculin controls lung alveolar enlargement and epiteliak cell survival through E-cadherin, LKB1, and AMPK. Cell Reports, 7(2):412-23, 2014

30. **Goncharova EA**, James ML, Kudryashova TV, Goncharov DA, Krymskaya VP: Tumor suppressors TSC1 and TSC2 differentially modulate actin cytoskeleton and motility of mouse embryonic fibroblasts. PlosOne, 9(10): e111476, 2014

31. Agassandian M, Tedrow JR, Sembrat J, Kass DJ, Zhang Y, **Goncharova EA**, Kaminski N, Mallampalli RK, Vuga LJ: VCAM-1 is a TGF-β1 inducible gene upregulated in idiopathic pulmonary fibrosis. Cellular Signaling, 27(12): 2467-2473, 2015

32. Kudryashova TV, Goncharov DA, Pena A, Ihida-Stansbury K, DeLisser H, Kawut SM, **Goncharova EA***: Profiling the role of mTOR in the vascular smooth muscle metabolome in pulmonary arterial hypertension. Pulmonary Circulation, 5(4): 667-680, 2015 *corresponding author

33. Lai YC, Tabima DM, Dube JJ, Hughan KS, Vanderpool RR, Goncharov DA, St Croix CM, Garcia-Ocaña A, **Goncharova EA**, Tofovic SP, Mora AL, Gladwin MT: SIRT3-AMPK activation by nitrite and metformin improves hyperglycemia and normalizes pulmonary hypertension in heart failure with preserved ejection fraction (PH-HFpEF). Circulation, 133(8): 717-731, 2016

34. Kudryashova TV[#], Goncharov DA[#], Pena A, Kelly N, Vanderpool R, Baust J, Kobir A, Shufesky W, Mora AL, Morelli AE, Zhao J, Ihida-Stansbury K, Chang B, DeLisser H, Tuder RM, Kawut SM, Silljé HHW, Shapiro S, Zhao Y, **Goncharova EA***: HIPPO-integrin linked kinase crosstalk controls self-sustaining proliferation and survival in pulmonary hypertension. American Journal of Respiratory and Critical Care Medicine, 194(7):866-877, 2016 [#]equal contribution; *corresponding author.

35. Sahoo S, Meijles D, Al Ghouleh I, Tandon M, Cifuentes-Pagano E, Sembrat J, Rojas M, **Goncharova E**, Pagano PJ: Mef2C-MYOCD-LMOD1 Suppression by miRNA-214 promotes smooth muscle cell phenotype switching in pulmonary arterial hypertension. PlosOne 11(5):e0153780, 2016

36. Romero Y, Bueno M, Ramirez R, Álvarez D, Sembrat J, **Goncharova EA**, Rojas M, Selman M, Mora AL, Pardo A: mTORC1 activation decreases autophagy in aging and idiopathic pulmonary fibrosis and contribute to apoptosis resistance in IPF fibroblasts. Aging Cell 15(6):1103-1112, 2016

37. Kelly NJ, Dandachi N, Goncharov DA, Pena AZ, Radder JE, Gregory AD, Lai YC, Leme AS, Gladwin MT, **Goncharova EA**, St Croix CM, Shapiro SD: Automated Measurement of Blood Vessels in Tissues from Microscopy Images. Current Protocols in Cytometry 78:12.44.1-12.44.13, 2016

38. Meng Q, Lai YC, Kelly NJ, Bueno M, Baust J, Bachman T, Goncharov D, Vanderpool RR, Radder JE, Hu J, **Goncharova E**, Morris A, Mora AL, Shapiro SD, Gladwin MT: Development of a Mouse Model of Metabolic Syndrome, Pulmonary Hypertension, and Heart Failure with Preserved Ejection Fraction (PH-HFpEF). American Journal of Respiratory Cell and Molecular Biology 56(4):497-505, 2017

39. Al Ghouleh I, Sahoo S, Meijles D, Amaral J, de Jesus D, Sembrat J, Rojas M, Goncharov D, **Goncharova E**, Pagano P: Endothelial Nox1 Oxidase Assembly in Human Pulmonary Arterial Hypertension; Driver of Gremlin1-Mediated Proliferation. Clinical Science 131(15):2019-2035, 2017

40. Boucherat O, Chabot S, Paulin R, Trinh I, Bourgeois A, Potus F, Lampron M-C, Lambert C, Breuils-Bonnet S, Paradis R, **Goncharova EA**, Provencher S, Bonnet S: HDAC6: A Novel Histone Deacetylase Implicated in Pulmonary Arterial Hypertension. Scientific Reports 7(1):4546, 2017

41. Pena A[#], Kobir A[#], Goncharov D, Goda A, Vanderpool R, Baust J, Chang B, Mora AL, Gorcsan J III, **Goncharova EA***: Pharmacological inhibition of mTOR kinase reverses right ventricle remodeling and improves right ventricle structure and function in rats. American Journal of Respiratory Cell and Molecular Biology 57(5):615-625, 2017 [#]equal contribution; *corresponding author

42. Alvarez RA, Miller MP, Hahn SA, Bauer E, Sembrat J, Goncharov D, Rojas M, Gladwin MT, **Goncharova E**, Straub AC: Increased hemoglobin α expression in pulmonary endothelial cells contributes to endothelial dysfunction in pulmonary hypertension. American Journal of Respiratory Cell and Molecular Biology 57(6):733-744, 2017

43. Falabella M, Sun L, Barr J, Peña AZ, **Goncharova E**, Kaufman BA: Single-step qPCR detection of diverse CRISPR-Cas9 gene editing events in vivo. G3: Genes/Genomes/Genetics 7(10):3533-3542, 2017

44. Goncharov DA, **Goncharova EA**, Tofovic SP, Hu J, Baust JJ, Pena AZ, Ray A, Rode A, Vanderpool RR, Mora AL, Gladwin MT, Lai YC: Metformin Therapy for Pulmonary Hypertension Associated with HFpEF versus PAH. American Journal of Respiratory and Critical Care Medicine 198(5):681-684, 2018

45. Kudryashova TV[#], Shen Y[#], Pena A, Cronin E, Okorie E, Goncharov DA, **Goncharova EA***: Inhibitory antibodies against Activin A and TGF-β reduce self-supported, but not soluble factors-induced growth of human pulmonary arterial vascular smooth muscle cells in pulmonary arterial hypertension. International Journal of Molecular Sciences 19(10), 2957, 2018 [#]equal contribution; *corresponding author.

46. Farkas D, Thompson AAR, Bhagwani AR, Hultman S, Ji H, Kotha N, Farr G, Arnold ND, Braithwaite A, Casbolt H, Sabroe CGEI, Monaco C, Cool CD, **Goncharova EA**, Lawrie A, Farkas L: Toll-like receptor 3 is a therapeutic target for Pulmonary Hypertension. American Journal of Respiratory and Critical Care Medicine 199(2):199-210, 2019

47. Estephan LE, Genuardi MV, Kosanovich CM, Risbano MG, Zhang Y, Petro N, Watson A, Aaraj YA, Sembrat JS, Rojas M, Goncharov DA, Simon MA, **Goncharova EA**, Vaidya A, Smith A, Mazurek J, Han Y, Chan SY: Distinct plasma gradients of microRNA-204 in the pulmonary circulation of patients suffering from WHO Groups I and II pulmonary hypertension. Pulmonary Circulation 9(2):2045894019840646, 2019

48. Shen Y, Goncharov DA, Avolio T, Ray A, Okorie E, Mora AL, Vanderpool R, Kudryashova TV, **Goncharova EA***: Differential effects of integrin-linked kinase inhibitor Cpd22 on severe pulmonary hypertension in male and female rats. Pulmonary Circulation 10(1): 2045894019898593, 2020 *corresponding author.

49. Bhagwani RA, Farkas D, Harmon B, Authelet KJ, Cool CD, Kolb MRJ, **Goncharova EA**, Yoder MC, Clauss M, Freishtat R, Farkas L: Clonally selected primitive endothelial cells promote occlusive pulmonary arteriopathy and severe pulmonary hypertension in rats exposed to chronic hypoxia. Scientific Reports 10(1):1136, 2020

50. Wang L, Halliday G, Huot JR, Satoh T, Baust JJ, Fisher A, Cook T, Hu J, Avolio T, Goncharov DA, Vanderpool RR, Considine RV, Bonetto A, Tan J, Bachman TN, Sebastiani A, Mora AL, **Goncharova EA**, Gladwin MT, Lai YC: Treatment with Treprostinil and Metformin Normalizes Hyperglycemia and Improves Cardiac Function in Pulmonary Hypertension Associated with Heart Failure with Preserved Ejection Fraction (PH-HFpEF). Atherosclerosis, Thrombosis and Vascular Biology, 40(6):1543-1558, 2020

51. Daneva Z, Marziano C, Ottolini M, Chen YL, Hong K, Cope EL, Baker TM, Zhang A, Ta H, Mihalek AD, Minshall RD, Kasetti RB, Shen Y, Zode GS, **Goncharova EA**, Laubach VE, Sonkusare SK: Caveolar peroxynitrite formation impairs endothelial TRPV4 channels and elevates pulmonary arterial pressure in pulmonary hypertension. Proceedings of the National Academy of Science, 118(17):e2023130118, 2021

52. Dong YN, Hsu FC, Koziol-White CJ, Stepanova V, Jude JA, Mott R, Coulter DA, Panettieri RA, Jr, **Goncharova EA**, Goncharov DA, Cines DB, Lynch DR: Functional NMDA receptors are expressed by human pulmonary artery smooth muscle cells. Scientific Reports, 11(1):8205, 2021

53. Culley MK, Zhao J, Tai YY, Tang Y, Perk D, Negi V, Yu Q, Woodcock J, Handen A, Speyer G, Kim S, Lai YC, Satoh T, Watson A, Aaraj YA, Sembrat J, Rojas M, Goncharov D, **Goncharova EA**, Khan OF, Anderson DG, Dahlman JE, Gurkar A, Lafyatis R, Fayyaz A, Redfield M, Gladwin MT, Rabinovitch M, Gu M, Bertero T, Chan SY: Frataxin deficiency promotes endothelial senescence in pulmonary hypertension. Journal of Clinical Investigation, 131(11):e136459, 2021

54. Sharifi-Sanjani M, Berman M, Goncharov D, Alhamaydeh M, Avolio TG, Baust J, Chang B, Kobir A, Ross M, St. Croix C, McTiernan C, Moravec CS, **Goncharova EA**[#], Al Ghouleh I[#] (#equal contribution as senior authors): Yes-associated Protein (Yap) is Up-Regulated in Heart Failure and Promotes Cardiac Fibroblast Proliferation. International Journal of Molecular Sciences, *22*(11):6164, 2021

55. Sarode GV, Neier K, Shibata NM, Shen Y, Goncharov DA, **Goncharova EA**, Mazi TA, Joshi N, Settles ML, LaSalle JM, Medici V: Wilson disease: intersecting DNA methylation and histone acetylation regulation of gene expression in a mouse model of hepatic copper accumulation. Cellular and Molecular Gastroenterology and Hepatology 12(4):1457-1477, 2021

56. Satoh T, Wang L, Levine A, Hahn S, Baust J, Wyman S, Salamacha N, Wu Y, Espinosa-Diez C, Reynolds M, Shiva S, St Hilaire C, Gomez D, Goncharov DA, **Goncharova EA**, Straub A, Lai YC, McTiernan CF, Gladwin MT: Metabolic syndrome mediates ROS-miR-193b-NFYA-dependent down

regulation of sGC activity and contributes to exercise-induced pulmonary hypertension in HFpEF. Circulation 144(8):615-637, 2021

57. Sahoo S, Li Y, de Jesus D, Sembrant J, Rojas M, **Goncharova E**, Cifuentes-Pagano E, Straub A, Pagano P: Notch2 suppression mimicking changes in human pulmonary hypertension modulates Notch1 and promotes endothelial cell proliferation. American Journal of Physiology: Heart Physiology. 321(3):H542-H557, 2021

58. Kia DS, Shen Y, Bachman TN, **Goncharova E**, Kim K, Simon MA: Effects of Healthy Aging on Right Ventricular Structure and Biomechanical Properties. Frontiers in Medicine, 8:751338, 2022

59. Kudryashova TV[#], Dabral S[#], Nayakanti S, Ray A, Goncharov DA, Avolio T, Shen Y, Rode A, Pena A, Jiang L, Lin D, Baust J, Bachman TN, Graumann J, Ruppert C, Guenther A, Schmoranzer M, Grobs Y, Lemay SE, Tremblay E, Breuils-Bonnet S, Boucherat O, Mora AL, DeLisser H, Zhao J, Zhao Y, Bonnet S, Seeger W, Pullamsetti SS*, **Goncharova EA***: Non-canonical HIPPO/MST signaling via BUB3 and FOXO promotes pulmonary vascular cell proliferation and survival. *corresponding author. Circulation Research. 130(5):760-778, 2022 #equal contribution as first authors; *equal contribution as senior authors.

60. Jiang L, Goncharov DA, Shen Y, Lin D, Chang B, Pena A, DeLisser H, **Goncharova EA[#]**, Kudryashova TV[#]: Akt-dependent glycolysis-driven lipogenesis supports proliferation and survival of human pulmonary arterial smooth muscle cells in pulmonary hypertension. Frontiers in Medicine 9:886868, 2022 #equal contribution as senior authors.

**Reviews, books, book chapters, editorials, etc.**

61. **Goncharova EA**, Krymskaya VP: Pulmonary lymphangioleiomyomatosis (LAM): Progress and current challenges. Journal of Cellular Biochemistry 103(2): 369-382, 2008

62. Krymskaya VP, **Goncharova EA**: "PI3K/mTORC1 activation in hamartoma syndromes: therapeutic prospects" Cell Cycle 8(3): 403-413, 2009

63. **Goncharova EA***: mTOR and vascular remodeling in lung diseases: current challenges and therapeutic prospects. The FASEB Journal 27(5): 1796-1807, 2013 *corresponding author

64. **Goncharova EA*,** Gladwin MT, Kawut SM: Update in Pulmonary Vascular Diseases 2014. American Journal of Respiratory and Critical Care Medicine, 192(5): 544-550, 2015 *corresponding author

65. Pullamsetti SS, Savai R, Seeger W, **Goncharova EA***: Translational Advances in the field of Pulmonary Hypertension. From cancer biology to new PAH therapeutics: Targeting cell growth and proliferation signaling hubs. American Journal of Respiratory and Critical Care Medicine, 195(4):425-437, 2017 *corresponding author

66. Shen Y and **Goncharova EA***: TWISTed HIF: Re-visiting Smooth Muscle HIF-1α Signaling in Pulmonary Hypertension. American Journal of Physiology: Lung Cellular and Molecular Physiology 315(3):L387-L389, 2018 *corresponding author

67. Lai YC, Provencher S., **Goncharova EA***: TAKling GDF-15 and Skeletal Muscle Atrophy in Pulmonary Hypertension: Are We There Yet? Thorax 74(2):103-105, 2019 *corresponding author

68. Spiekerkoetter E, **Goncharova EA**, Guignabert C, Stenmark K, Kwapiszewska G, Rabinovitch M, Voelkel N, Bogaard HJ, Graham B, Pullamsetti SS, Kuebler WM: Hot topics in Pulmonary Arterial Hypertension Disease Mechanisms: Cancer-like pathobiology, the role of the adventitia, systemic involvement, and right ventricular failure. Pulmonary Hypertension 9(4):2045894019889775, 2019

69. **Goncharova EA***, Simon MA, Yuan JXJ: mTORC1 in Pulmonary Arterial Hypertension: at the crossroads between vasoconstriction and vascular remodeling? American Journal of Respiratory and Critical Care Medicine 201(10):1177-1179, 2020; *corresponding author

70. **Goncharova EA**, Chan SY, Ventetuolo SE, Weissmann N, Schermuly RT, Mullin CJ, Gladwin MT: Update in pulmonary vascular diseases and right ventricular dysfunction in 2019 American Journal of Respiratory and Critical Care Medicine 202(1):22-28, 2020

71. **Goncharova EA***, Kudryashova TV, Maroli G, Pullamsetti S: Matrix metalloproteinase 8 in pulmonary hypertension: the sheep in the wolf's skin? American Journal of Respiratory and Critical Care Medicine 204(12):1361-1363, 2021, *corresponding author

72. **Goncharova EA***, Bogaard HJ, de Jesus Perez VA: Pulmonary Hypertension in the Modern Era: Science and Clinical Practice. Frontiers in Medicine 8:785181, 2021, *corresponding author

73. **Goncharova EA***, Farkas L: Stem cell-derived nanovesicles for the treatment of pulmonary hypertension: are we there yet? American Journal of Respiratory Cell and Molecular Biology 67(1):3-5, 2022, *corresponding author

74. Farkas L, **Goncharova E**: Circling in on Pulmonary Arterial Hypertension: Is it time to consider circular RNA circ_0016070 as a biomarker and target for therapy? Journal of the American Herat Association 11(14):e026798, 2022

*Under revision:*

Toyama T*, Kudryashova TV*, Ichihara A*, Lenna S, Looney A, Shen Y, Avolio T, Goncharov D, Delisser H, Lafyatis R, Seta F, **Goncharova EA**[#], Trojanowska M[#] (#equal contribution as senior authors): GATA6 coordinates cross-talk between BMP10 and oxidative stress axis in pulmonary arterial hypertension. *Under revision*

Gorelova A, Berman M, Alsuraimi A, Riva P, Negi V, Bertero T, Goncharov D, Kudryashova T, Dosunmu-Ogunbi A, Harvey L, Nouraie M, Baust J, Bachman T, Sebastiani A, Sembrat J, Vargas S, Waxman A, Saggar R, Rahul K, Graham B, Straub A, **Goncharova E**, Mora A, Chan S, Al Ghouleh I:

The Role of EBP50 in Regulating Endothelial-To-Mesenchymal Transition in Pulmonary Hypertension. *Under revision*

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191. Kudryashova TV*, Dabral S*, Nayakanti S, Ray A, Goncharov DA, Avolio T, Shen Y, Rode A, Pena A, Baust J, Bachman TN, Graumann J, Schmoranzer M, Mora A, DeLisser H, Zhao J, Zhao Y, Seeger W, Pullamsetti SS# and **Goncharova EA**#: MST1/2-BUB3/FOXO Signaling Is Responsible for Pro-survival Phenotype of Pulmonary Vascular Cells in Pulmonary Arterial Hypertension. *New York Academy of Sciences/Regeneron Symposium "Pulmonary Arterial Hypertension: Beyond Vasodilation" Virtual*, Oct. 12, 2021
192. Jheng JR, Noda K, Halliday G, Bai Y, Huot JR, Cook T, Goncharov DA, **Goncharova EA**, Simon M, Forman D, Rojas M, Bonetto A, Machado RF, Gladwin MT, Lai YC: Skeletal Muscle SIRT3 Deficiency-mediated LOXL2 Secretion in Remote Pulmonary Vascular Remodeling and Pulmonary Hypertension in Heart Failure with Preserved Ejection Fraction. *Circulation 144 Suppl 1, 10677*, 2021.

193. Kudryashova TV, Ichihara A, Toyama T, Shen Y, Goncharov D, Avolio T, Lafyatis R, Trojanowska M, **Goncharova EA**: Reciprocal Bi-directional Cross-talk between GATA6 and YAP Regulates Vascular Smooth Muscle Cell Hyper-proliferation in PAH. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A1192
194. Shen Y, Goncharov D, Jiang L, Lin D, Avolio T, Okorie E, Mora AL, Saiyed A, Kudryashova TV, **Goncharova EA**: Vps34 is Up-regulated and Promotes Proliferation and Survival of Smooth Muscle Cells in Pulmonary Arterial Hypertension. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A5186
195. Jiang L, Goncharov DA, Shen Y, Lin D, Chang B, Pena A, **Goncharova EA**, Kudryashova TV: SIRT7- and JNK-mediated Akt Supports Glycolysis-driven Lipogenesis and Proliferation of Human Pulmonary Arterial Vascular Smooth MuscleCells in Pulmonary Arterial Hypertension. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A1175
196. Piper B, Bhagwani A, Hudson J, **Goncharova E**, Farkas L: Hypoxia signaling and p53 regulate expression of endosomal GTPase RAB7 in pulmonary artery endothelial cells in PAH. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A5187
197. Hudson J, Shin K, Pan A, Ali M, Bhagwani AR, Bogamuwa S, Piper B, Yan P, **Goncharova E**, Farkas L: RAB7 Silencing Induces an Anti-angiogenic mRNA Signature in Human Pulmonary Artery Endothelial Cells. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A5188
198. Lai Y, Jheng J, Bai Y, Noda K, Halliday G, Huot J, Bonetto A, Goncharov D, **Goncharova EA**, Simon M, Rojas M, Machado RF, Gladwin MT: Skeletal Muscle SIRT3 Deficiency-Mediated LOXL2 Secretion in Remote Pulmonary Vascular Remodeling and PH-HFpEF. *American Journal of Respiratory and Critical Care Medicine* 2022, 205:A4807
199. Jiang L, Goncharov DA, Shen Y, Lin D, Chang B, Pena A, **Goncharova EA**, Kudryashova TV: Akt-dependent glycolysis-driven lipogenesis supports proliferation and survival of human pulmonary arterial smooth muscle cells in pulmonary hypertension. *The California Thoracic Society Educational Conference*, March 2022, Monterrey, CA
200. Shen Y, Goncharov D, Jiang L, Lin D, Avolio T, Okorie E, Mora A, Saiyed A, Kudryashova T, **Goncharova E.** Vps34 Up-regulation Promotes Smooth Muscle Cell Proliferation and Survival in Pulmonary Arterial Hypertension. 7th UC Davis Postdoctoral Research Symposium 2022.
201. Shen Y, Goncharov D, Jiang L, Lin D, Teos LY, Avolio T, Okorie E, Mora A, Saiyed A, Kudryashova T, **Goncharova E**: Vps34 Up-regulation Promotes Proliferation and Survival of Human Pulmonary Vascular Smooth Muscle Cells in Pulmonary Arterial Hypertension. *The California Thoracic Society Annual Educational Conference*, March 2022, Monterrey, CA *Received CTS Presidential Award.*

## TEACHING

2015-2016 Facilitator, pharmacology conference (GPCR drugs), Cellular and Pathologic Basis of Disease/Pharmacology course
2016 Small group leader, 2164_CLRES_2071_SEC1110_Research Design and Development
2016-2019 Small group leader, CLRES_2071_SEC1030_Advanced Grant Writing Course
2016-2020 Lecturer, Principles of Pharmacology course (2164)
2016-2020 Faculty mentor, First Experiences in Research Program
2017-2020 Faculty mentor, The Pittsburgh Undergraduate Research Diversity Program (PURDiP)
2018-2020 Faculty mentor, Summer Undergraduate Research Program

2018-2020 Faculty mentor, Continuing Experiences in Research Program
2018-2020 Course Director, HVI/VMI Research Conference, University of Pittsburgh DOM
2019 Instructor, Fundamentals of Bench Research Summer Course PACCD
2020-2021 IOR PUL 299-010 Fall 2020 (CRN 4973)
2021 IOR PUL 299-010 Winter 2021 (CRN 45618)
2021 IOR PUL 299-010 Spring 2021 (CRN 62836)
2021 Lecturer, PTX 290 Winter 2021 Seminar series
2021 Instructor, F Award Writing Workshop, Office of Education, Training, and Career Development, UC Davis Comprehensive Cancer Center
2021 IOR PUL 299-099 Fall 2021 (CRN 539040)
2022 Instructor, PUL 2099-099 Winter 2022
2022 IOR PUL 299-099 Spring 2022

**Lectures and seminars given (internal):**

2004 "Glucocorticoids as modulators of airway smooth muscle cell migration"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2006 "Role of interferon beta and interferon gamma in modulating LAM-derived (LAMD) cell proliferation"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2007 "New therapeutic targets for combinational therapy in lymphangioleiomyomatosis (LAM)"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2008 "Molecular Insights Into LAM: Potential Therapeutic Targets"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2008 "Novel Role of TSC1/TSC2 in Modulating E-Cadherin Trafficking (Not Only LAM?)"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2010 "Pulmonary Vascular Remodeling: Potential Signaling Mechanisms"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2010 "Vascular Remodeling in PAH: Potential Targets to Inhibit Vascular Smooth Muscle Cell Proliferation"; Penn Cardiovascular Institute Pulmonary Vascular Disease Program, University of Pennsylvania

2010 "Mammalian Target of Rapamycin as novel modulator of vascular smooth muscle cell proliferation in PAH"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2012 "mTOR - novel target for Pulmonary Arterial Hypertension?"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2013 "mTORC2 signaling in pulmonary vascular remodeling"; Pulmonary, Allergy, and Critical Care Division Research Conference, University of Pennsylvania

2013 “mTOR signaling in pulmonary hypertension”, Vascular Medicine Institute Research Conference, University of Pittsburgh

2014 “Targeting proliferation/apoptosis disbalance in pulmonary hypertension: what is broken and can we fix it?” Vascular Medicine Institute Research Conference, University of Pittsburgh

2016 “Rapamycin: From anti-fungal agent to cancer and cardiovascular disease therapy” Principles of Pharmacology course, University of Pittsburgh

2016 “Quantitative Echocardiography in a Rat Model of Pulmonary Hypertension” Vascular

Medicine Institute Research Conference, University of Pittsburgh
2017 “Rapamycin: From anti-fungal agent to cancer and cardiovascular disease therapy” Principles of Pharmacology course, University of Pittsburgh
2017 “New kids on the block: HIPPO and mTOR in Pulmonary Hypertension" Basic and Translational Research in Lung Diseases Conference, University of Pittsburgh
2019 “ "Targeting mTOR in pulmonary hypertension: bench to bedside and back again" HVI/VMI Research Conference, University of Pittsburgh
2020 “Rapamycin: From anti-fungal agent to cancer and cardiovascular disease therapy” Principles of Pharmacology course, University of Pittsburgh
9/25/2020 “Pulmonary Hypertension Basic Research: Victories and Challenges” UC Davis Lung Center Webinar Series, University of California, Davis
2/09/2021 “Mechanistic target of rapamycin: a tale of two diseases" UC Davis PTX 290 Seminar series
2/25/2022 “Friend or Foe? HIPPO signaling in Pulmonary Hypertension” UC Davis Lung Center Webinar Series, University of California, Davis
6/02/2022 “Division of Pulmonary, Critical Care and Sleep Medicine” UC Davis Internal Medicine Grand Rounds Research Symposium, University of California, Davis.

**Mentoring of pre- and post-doctoral students, research fellows and junior faculty:**

Undergraduate students:

| | |
|---|---|
| 2014 | Temika Coley |
| 2016-2019 | Arnab Ray |
| 2017-2019 | Andres Ivan Chavez Barragan |
| 2017 | Okechukwu Aloziem |
| 2017 | Anastasia Eichler |
| 2017-2018 | Analise Rode |
| 2018-2019 | Alyssa Glenn |
| 2018 | Emily Cronin |
| 2018-2020 | Evelyn Okorie |
| 2019-2020 | Sara Grunblatt |
| 2019 | Lacendria Pulley |
| 2019-2020 | Matt Kart |
| 2021- | Aisha Saiyed |
| 2022- | Jabez Domingo |

Pre- and post-graduate students:

| | |
|---|---|
| 2003 | Ekaterina V. Talovskaya, Post-graduate student |
| 2004 | Jerom Henry Taylor, Jr., Pre-med student |
| 2006-2007 | Jenifer Snow, MD Fellow |
| 2010-2011 | Stephen M. Lu, Pre-med student |
| 2013 | Mi Thant Mon Soe, MS fellow |
| 2013 | Houman Ziai, MS fellow |

Graduate students:

Rotation projects:

| | |
|---|---|
| 2016 | Daniel Zuppo, Graduate Student, University of Pittsburgh interdisciplinary |

Biomedical Graduate Program (rotation project)

Dissertation/defense committee member:

2015-2016 Neil Kelly, Graduate Student, University of Pittsburgh Cellular & Molecular Pathology Graduate Program (defense committee)

2016-2017 Brittani Seynnaeve, MD, Pediatric Hematology/Oncology Fellow, PGY-6 (master's final project committee)

2016-2020 Anastasia Gorelova, Graduate Student, University of Pittsburgh Department of Pharmacology and Chemical Biology Graduate Program (dissertation committee)

2018 Kaitlin Stanley, MD, Pediatric Hematology/Oncology Fellow, PGY-6 (master's final project committee)

2019-2020 Mingjun Liu, Graduate Student, University of Pittsburgh School of Medicine (dissertation committee)

2022 Krista Thongphahn, Graduate Student, University of California, Davis PTX graduate group (oral qualifying exam committee member)

Post-doctoral students:

Direct mentorship/co-mentorship:

2007 Lyn M. Moir, Postdoctoral Researcher

2007 Gregory Cesarone, Postdoctoral Researcher (now: Study Director, IHC Services, Discovery Life Sciences)

2013-2015 Tatiana Kudryashova, Postdoctoral Associate (now: Assistant Professor, University of California, Davis)

2014-2015 Maryam Sharifi-Sanjani, Postdoctoral Scholar (now: Research Instructor, University of Pittsburgh Department of Medicine)

2015-2016 Ahasanul Kobir, Postdoctoral Associate (now: Technical Consultant, iccdr,b, Dhaka, Bangladesh)

2018-2019 Alaeddin Abukabda, Postdoctoral Associate (now: Assistant Professor, Lake Erie College of Osteopathic Medicine)

2018-present Yuanjun (Steven) Shen, Postdoctoral Researcher

2020-present Lifeng Jiang, Postdoctoral Researcher

2022-present Iryna Zhyvylo, Postdoctoral Researcher

Mentor committee member:

2018-2020 Brittany Durgin, Postdoctoral Associate

Junior Faculty:

Direct mentorship/co-mentorship:

2014-2016 Louis Vuga, Assistant Professor (now: Director, the Interstitial Lung Disease/Fibrosis Program, NIH/NHLBI).

2015-2016 Baojun Chang, Research Instructor (mentor)

2017-2020 Imad Al Ghouleh, Assistant Professor (co-mentor)

2017-2018 Charly Lai, Research Assistant Professor (co-mentor) (now: tenure track

Assistant Professor, Indiana University School of Medicine)
2019-present Tatiana Kudryashova, Assistant Professor, University of California, Davis

Mentor Committee member:
2016-2020 Cynthia St Hilaire, Assistant Professor (Mentor Committee)

Other:
2022 Mentor, Department of Internal Medicine Speed Mentoring.

**Biomedical Postdoctoral Programs:**

2012 Judge, 11th Annual Biomedical Postdoctoral Research Symposium, University of Pennsylvania

2013 Reviewer, K Kiosk (A guide to applying for NIH career development "K" Awards) University of Pennsylvania, Philadelphia, PA

**Other**

2014 Guest Mentor, Research Basis of Medical Knowledge course, University of Pittsburgh Physician Scientist Training Program

2014-2020 Reviewer, Pittsburgh Heart, Lung and Blood Vascular Medicine Institute Editorial Grant Review Core

2020 Reviewer, F Award Writing Workshop, UC Davis Comprehensive Cancer Center

## GRANTS

***Pending***

R01 (Stepanova/Goncharova)
**uPA/PAI1 in pulmonary arterial hypertension**
Role in grant: mPI, 1.08 calendar
National Heart, Lung, and Blood Institute/NIH

R01 (Rafikova) ***scored 5%***
**Mitochondrial dysfunction in pulmonary hypertension**
Role in grant: Co-I, Subcontract PI; 0.6 calendar, $54,921 annual direct

R01 (Kudryashova) ***scored 10%***
**HIPK2 signaling in pulmonary arterial hypertension**
Role in grant: Co-I, 0.36 calendar

R01 (Farkas)
**The role of endolysosomal RAB7 in pulmonary endothelial cell dysfunction in pulmonary arterial hypertension**
Role in grant: Co-I, Subcontract PI; 0.6 calendar, $58,020 annual direct
National Heart, Lung, and Blood Institute/NIH

***Current*:**

2R01HL113178 (Goncharova)
**TSC2 signaling in Pulmonary Arterial Hypertension** (A0 awarded with score 3%)
Role in grant: PI, 1 calendar, $265,988/annual direct
4/1/2018-3/31/2023 (nce)
National Heart, Lung, and Blood Institute/NIH

R01HL130261 (Goncharova)
**HIPPO signaling in Pulmonary Arterial Hypertension** (A0 awarded with score 13%; competitive renewal A0 awarded with score 14%)
Role in grant: PI, 1.2 calendar, $263,765/annual direct
2/2016-04/30/2024
National Heart, Lung, and Blood Institute/NIH/DHHS

R01HL150638 (Trojanowska/Goncharova)
**GATA-6 in pulmonary arterial hypertension**
Role in grant: mPI, 1.2 calendar, $400,000 annual direct
03/05/2020-01/31/2024
National Heart, Lung, and Blood Institute/NIH

R01HL139881 (Farkas)
**Endothelial TLR3 deficit in Pulmonary Arterial Hypertension**
Role in grant: Co-I, Subcontract PI; 0.6 calendar, $47,733 annual direct
01/01/2019-12/31/2022
National Heart, Lung, and Blood Institute/NIH

HL007013 (Kenyon)
**Training in Comparative Lung Biology and Medicine**
Role in grant: Co-I, 0.6 calendar
07/01/1975-07/31/2024
National Heart, Lung, and Blood Institute/NIH

***Past:***

2P01 HL103455 (Gladwin)
**Vascular Subphenotypes of Lung Disease**
Role in grant: Co-I, 1.2 calendar, $138,027/annual direct
5/1/2016-4/30/21
National Heart, Lung, and Blood Institute/NIH

R01HL146914 (Sonkusare)
**CAV-1.TRPV4 regulation of endothelial function in small pulmonary arteries**
Role in grant: Co-I, Subcontract PI. 0.36 calendar, $15,280 annual direct

04/15/2019-07/31/2020
National Heart, Lung, and Blood Institute/NIH

R01HL148712 (Al Ghouleh)
**Endothelial Reprogramming in Pulmonary Hypertension**
Role in grant: Co-I, 0.4 calendar
07/01/2019-07/31/2020
National Heart, Lung and Blood Institute/NIH/DHHS

R01DK062277 (Monga)
**Role of Wnt/beta-catenin signaling in liver regeneration**
Role in grant: Co-I, 0.24 calendar $3,623 annual direct
07/01/2019-07/31/2020
NIH

Pfizer (Goncharova)
**Gene and protein expression analysis in pulmonary arterial smooth muscle cells isolated from patients with pulmonary arterial hypertension**
Role in grant: PI, 1.2 calendar, $138,251/annual direct
11/1/2018-10/30/2019

Hemophilia Center of Western PA (Gladwin)
**Hemostasis and Vascular Biology Research Institute - Cell Processing Core**
Role in grant: Cell Processing Core PI, 0.12 calendar, $21, 964/annual direct
07/01/2013 - 06/30/2028

Hemophilia Center of Western PA (Goncharova)
**Platelet-focused omic Approaches for Novel Molecular Targets to Prevent Bleeding and Impaired Clot Formation in Hemophilia**
Role in grant: PI, 0.6 calendar, $150,000/annual direct
06/01/2019 – 05/31/2022

P50 AR060780-06A1 (Lafyatis)
**Translational Studies For Identifying And Targeting Novel Pathways In Systemic Sclerosis Pathogenesis**
Role in grant: co-I, project 2, 1.2 calendar, $31,528/annual direct
9/1/2011 – 6/30/2022
National Institute of Arthritis And Musculoskeletal And Skin Diseases/NIH

P41 (Gropler)
**PET Radiotracer Translation and Resource Center (PET-RTRC)**
**Service Project for TR&D Project 1 – Imaging the Sphingosine-1-Phosphate Receptor 1 (S1P1)**
(Goncharova/Mason/Anderson/Gladwin)
Role in grant: service project PI, no effort
04/2017-03/2022
National Heart, Lung, and Blood Institute/NIH/NIBIB

Regeneron (Goncharova/Gladwin/Kass)
**Antibodies to gremlin 1, activin A and TGFβ to target PAVSMC remodeling and pulmonary hypertension**
Role in grant: PI
12/2016-11/2018
Regeneron

4500002337 (Trojanowska)
**Preclinical assessment of dimethyl fumarate (Tecfidera) as a novel therapeutic for SSc-PAH**
Role in grant: co-I, Subcontract PI
04/01/18-03/31/19
Scleroderma Foundation

R01HL113178 (Goncharova)
**mTOR coordinates cell metabolism, growth and survival in pulmonary hypertension**
Role in grant: PI
9/2012-6/2017
National Heart, Lung and Blood Institute/NIH/DHHS

VMI-HVI Innovator Award (Goncharova, Gorcsan)
**Quantitative Echocardiography in a Rat Model of Pulmonary Hypertension**
Role in grant: PI
9/2014-8/2015
VMI-HVI, University of Pittsburgh
$25,000 annual direct costs

R01HL110551 (Krymskaya)
**Role Of Folliculin (Flcn) In Lung Cell Survival**
Role in grant: Co-I
5/2012-6/2013
National Heart, Lung and Blood Institute/Nih/Dhhs

R01HL114085 (Krymskaya)
**Tsc Signaling and Pulmonary Lam**
Role in grant: Co-I
5/2012-6/2013
National Heart, Lung and Blood Institute/Nih/Dhhs

RG-196551 (Goncharova)
**Understanding the Cellular and Molecular Mechanisms of Mtor Signaling In Vascular Smooth Muscle Remodeling In PAH**
Role in grant: PI
7/2011-2/2013
American Lung Association

(Goncharova)

**Effect of Ispinesib of Proliferation Of Pulmonary Arterial Vascular Smooth Muscle (Pavsm) Cells**
Role in grant: PI
7/2011-9/2012
Cytokinetics

University Research Foundation Award (Goncharova)
**The role of mTORC2 in regulating vascular smooth muscle cell proliferation in pulmonary arterial hypertension (PAH)**
Role in grant: PI
3/2011-2/2012
University Research Foundation

Gilead Science Research Scholar Program Award (Goncharova)
**Role Of S6 Kinase 1 In Modulating Pulmonary Arterial Vsm Cell Proliferation**
Role in grant: PI
1/2010-12/2011
Gilead Sciences

Parker B. Francis Fellowship in Pulmonary Research (Goncharova)
**Rhoa Gtpase Modulates Cell Proliferation In Lymphangioleiomyomatosis (Lam)**
Role in grant: PI
7/2008-6/2011
Francis Families Foundation

LAM-07-001 (Goncharova)
**Defining The Role Of Rhoa Gtpase In Modulating Lam Cell Growth**
Role in grant: PI
1/2008-1/2010
American Thoracic Society

LAM048F01-05 (Goncharova)
**Interferon beta but not Interferon gamma Modulates LAMD Cell Growth**
Role in grant: PI
1/2005-1/2008
The LAM Foundation

## INVITED LECTURESHIPS

2004 "Fluticasone as a modulator of airway smooth muscle (ASM) cell migration" GlaxoSmithKline, Upper Merion, PA
2005 "Cell Migration" GlaxoSmithKline, Upper Merion, PA
2012 "mTORC2: Novel Regulator of Cell Metabolism in PAH?" University of Maryland School of Medicine

2012 "mTORC2 Coordinates Energy Metabolism, Proliferation and Survival of Vascular Smooth Muscle Cells in Idiopathic PAH" Keystone Symposia "Pulmonary Vascular Disease and Right Ventricular Dysfunction: Current Concepts and Future Therapies", Monterey, CA

2012 "Pulmonary hypertension in adults and newborns: shared molecular mechanisms of pulmonary vascular remodeling" Nemours Biomedical Research, A.I. DuPont Hospital for Children, Wilmington, DE

2012 "mTORC2: a Novel Modulator of Vascular Cell Metabolism, Proliferation and Survival in Pulmonary Arterial Hypertension" The University of Texas Health Science Center at Tyler, Tyler, TX

2013 "Novel role of mTOR signaling in pulmonary vascular remodeling" University of Pittsburgh Vascular Medicine Institute, Pittsburgh, PA

2013 "Novel role of mTOR signaling in pulmonary vascular remodeling" Lovelace Respiratory Research Institute, Albuquerque, NM

2013 "Targeting mTORC2-Akt signaling in pulmonary hypertension" Center for Translational Medicine, Jefferson University, Philadelphia, PA

2013 "mTORC2 in pulmonary vascular remodeling" Pulmonary and Critical Care Medicine Lung Research Conference, John Hopkins University, Baltimore, MD

2015 "Targeting proliferation/apoptosis imbalance in pulmonary hypertension" Molecular Medicine Research Seminars, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA

2015 "mTOR and Vascular Remodeling in PH: Current Challenges and Therapeutic Prospects" Scientific Symposium "Junctions of Pro-Proliferative Signaling Pathways in Pulmonary Hypertension: 'Hot Spots' for Therapeutic Intervention?" American Thoracic Society International conference, Denver, CO

2016 "New kids on the block - Hippo, mTOR, and vascular smooth muscle metabolism in pulmonary hypertension" AHA Scientific Sessions 2016, VA.CVS.276 Cardiovascular Seminar "HIPPO in Pulmonary Hypertension: At Cross-roads Between Metabolic Signaling, Proliferation and Extracellular Matrix Pathology"

2016 "mTOR-AMPK Axis, Energy Metabolism and Pulmonary Vascular Remodeling in Pulmonary Arterial Hypertension" AHA Scientific Sessions 2016, VA.CVS.254 Cardiovascular Seminar "Beyond Glycolysis: Metabolic Alterations in Pulmonary Hypertension"

2017 "Hippo, mTOR and pulmonary hypertension: targeting cell growth signaling hubs" Pulmonary Vascular Disease seminar, Brigham and Women's Hospital, Boston, MA

2017 "ABI-009 for Severe Pulmonary Arterial Hypertension (WHO FC III and IV)" 4$^{th}$ Annual Drug Discovery and Development Symposium for Pulmonary Hypertension, Berlin, Germany (delivered by Dr. Marc Simon)

2017 "mTOR and HIPPO signaling hubs: from cancer biology to new PAH therapeutics" Pulmonary Grand Rounds, University of Pennsylvania Perelman School of Medicine

2018 "HIPPO-mTOR signaling hubs: Cancer-like alterations in pulmonary hypertension" American Thoracic Society International conference, San Diego, CA

2018 "PAH is a cancer-like disease" Current Controversies in PAH disease mechanisms: a pro/con debate; American Thoracic Society International conference, San Diego, CA

2018 "mTOR and HIPPO signaling hubs in pulmonary arterial hypertension: from cancer-like biology to novel therapeutics" Pulmonary Grand Rounds, University of California San Diego, San Diego, CA

2018 "Cancer-like alterations in Pulmonary Arterial Hypertension: Targeting cell growth and proliferation signaling hubs" Scleroderma Center Research Seminar, Boston University, Boston, MA

2019 "From cancer biology to new therapeutics: targeting cancer-like growth and proliferation signaling hubs in Pulmonary Arterial Hypertension" CCRBM Seminar and Q & A, UC Davis, Davis, CA

2019 "Targeting proliferative signaling in pulmonary hypertension: from cancer-like biology to disease- modifying treatments" University of Arizona College of Medicine, Phoenix, AZ

2020 "TSC2: new molecular target for therapeutic intervention in PAH"; 14th Annual World Congress on Pulmonary Vascular Disease, Lima, Peru

11/5/2021 "Friend or foe? HIPPO signaling in pulmonary hypertension" Stanford University Pulmonary Hypertension Grand Rounds

12/7/2021 "Targeting proliferative signaling in pulmonary hypertension: bench to bedside and back again" Pulmonary Grand Rounds, University of Maryland School of Medicine

3/15/2022 "Friend or Foe? HIPPO signaling in Pulmonary Hypertension" Collaborative Research Center 1213 "Pulmonary Hypertension and Cor Pulmonale" Research Seminar. Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany

3/29/2022 "Aiming with precision: Targeting proliferative signaling in pulmonary hypertension" Pulmonary Research Conference, The Ohio State University Wexner Medical Center, Columbus, OH

## OTHER RESEARCH-RELATED ACTIVITIES

***Organizing committees:***

2015- Member, ATS Pulmonary Circulation Assembly Program Committee
2019 Member, PVRI 14th Annual World Congress on Pulmonary Vascular Disease Organizing Committee
2019 Chair Elect, ATS Pulmonary Circulation Assembly Program Committee
2020 Chair, ATS Pulmonary Circulation Assembly Program Committee
2019-21 Member, ATS International Planning Committee
2020-21 Member, New York Academy of Sciences (NYAS) meeting "Pulmonary hypertension: beyond vasodilation" Organizing Committee
2021- Member, AHA Committee for Scientific Sessions Programming
2021-23 Member, 3CPR Scientific & Clinical Education Lifelong Learning Committee (SCILL) of the Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation
2022- Member, ATS Early Career Investigator Award in Pulmonary Vascular Disease Steering Committee

***Other activities:***

American Thoracic Society:

2010 Facilitator, Thematic poster session "Airway smooth muscle and novel inflammatory pathways"; ATS International Conference, New Orleans, LA
2011 Facilitator, Thematic poster session "Crazy muscles: airway and lymphatic smooth muscle and lymphangioleiomyomatosis (LAM)" ATS International Conference Denver, CO
2013 Facilitator, Thematic poster session "Advances in lymphangioleyomyomatosis and tuberous sclerosis: bench to bedside"; ATS International Conference Philadelphia, PA

2013 Moderator, Penn Pulmonary Vascular Disease Symposium, Philadelphia, PA
2014 Moderator, Poster Discussion Session "Preclinical models of pulmonary hypertension: novel targets and pathways". ATS International Conference, San Diego, CA
2015 Facilitator, Thematic Poster session "Pulmonary Vascular Remodeling in Pulmonary Hypertension". ATS International Conference, Denver, CO
2016 Lead Discussion Facilitator, Thematic Poster Session "Molecular Insight Into Pulmonary Hypertension". ATS International Conference, San Francisco, CA.
2017 Chair, Mini-Symposium "New Power Generation: Cells, Sex Hormones And Imaging in Pulmonary
Vascular Disease". ATS International Conference, Washington, DC
2019 Chair, Mini-symposium "Station to Station: Unraveling the Molecular Pathogenesis of PAH" ATS International Conference 2019
2020 Mentor, ATS PC Mentoring Program Panel Discussion, Dec 15, 2020
2021 Mentor, ATS PC Women in Pulmonary Vascular Disease happy hour, January 20, 2021
2022 Lead Moderator, Thematic Poster Session C56 "Cow hollow: preclinical models of pulmonary hypertension" ATS International Conference, San Francisco, CA.
2022 Mentor, ATS PC Assembly Mentoring Program

American Heart Association:
2016 Moderator, VA.CVS.254 Cardiovascular Seminar - Beyond Glycolysis: Metabolic Alterations in Pulmonary Hypertension. AHA Scientific Sessions, New Orleans, LA
2017 Moderator, Abstract Oral Session Novel Mechanistic Insights In Vascular Biology and Pulmonary Hypertension. AHA Scientific Sessions, Anaheim, CA
2018 Judge, AHA Fellows Research Day, Pittsburgh, PA
2018 Abstract Grader, AHA Scientific Sessions, Chicago, IL
2019 Abstract Grader, AHA Fellows Research Day, Pittsburgh, PA
2019 Judge, AHA Fellows Research Day, Pittsburgh, PA
2019 Moderator, Pathophysiology of RV Failure, HFpEF and PAH abstract session, AHA Scientific Sessions 2019, Philadelphia, PA.
2020 Judge, AHA Fellows Research Day, Pittsburgh, PA
2020 Abstract Grader, AHA Scientific Sessions, Dallas, TX
2020 Panel member, PH.EC.694. Speed Mentoring: Meet the Experts in Pulmonary Vascular Disease. AHA Scientific Sessions 2020 Nov
2020 Poster Professor, Abstract Poster Session "Novel Mechanisms of Pulmonary Arterial Hypertension" AHA Scientific Sessions 2020 Nov
2021 Judge, 3CPR Cournand and Comroe Early Career Investigator Award Competition, AHA Scientific Sessions. Oct 21, 2021 live virtual event
2021 Faculty Mentor, 3CPR Speed Mentoring Session PH.EC.121, AHA Scientific Sessions, live virtual event

Pulmonary Vascular Research Institute:
2017 Moderator, Basic Science Posters Sessions, the 11th PVRI Annual World Congress on PVD, Miami, FL
2022 Chair, webinar "The association between cancer and PH - a tale of two diseases", PVRI Live Interactive Webinar Series 2021 & 2022*

Pulmonary Hypertension Association:

2018 Moderator, Novel Therapies Targeting the Right Ventricle, Novel Therapies Targeting the Pulmonary Vasculature, Novel Clinical Trial Design and Endpoints Sessions; Pulmonary Hypertension Association International PH Conference and Scientific Sessions, Orlando, FL

NY Academy of Sciences:

2021 Chair, New York Academy of Sciences/Regeneron Symposium "Pulmonary Arterial Hypertension: Beyond Vasodilation" Virtual, Oct. 12, 2021

***Reviewer, grants:***

2022-2026 Standing Member, NIH/NHLBI RIBT study section

2011 Scientist reviewer, Tuberous Sclerosis Complex Research Program (TSCRP) Department of Defense Congressionally Directed Medical Research Programs (CDMRP)
2011 Ad Hoc reviewer, TSCRP Department of Defense CDMRP
2013 Scientist reviewer, TSCRP Department of Defense CDMRP
2013 Ad hoc scientist reviewer, TSCRP Department of Defense CDMRP
2013 Ad hoc Chair, TSCRP Department of Defense CDMRP
2013 Reviewer, Medical Research Council (UK)
2013 Panel Member, Vascular Wall Biology AHA Study Section
2014 Ad hoc reviewer, RIBIT study section, NIH/NHLBI
2014 Reviewer, NIH/NHLBI ZRG1 CVRS-G (02) M Pulmonary Diseases
2015 Reviewer, Medical Research Council (UK)
2015 Scientist Reviewer, TSCRP Department of Defense CDMRP
2015 Scientist Reviewer, TSCRP Department of Defense TSCRP
2016 Reviewer, NIH/NHLBI ZRG1 CVRS G (02) M Pulmonary Diseases
2016 Scientist Reviewer, TSCRP Department of Defense TSCRP
2016 Reviewer, NIH/NHLBI ZRG1 CVRS-L (02) M Pulmonary Diseases
2016 Co-Chair, NIH/NHLBI ZRG1 CVRS-L (02) M Pulmonary Diseases
2017 Reviewer, FWF Austrian Science Fund
2017 Reviewer, Medical Research Council (UK)
2017 Reviewer, Wellcome Trust
2017 Scientist Reviewer, TSCRP Department of Defense CDMRP
2017 Reviewer, NIH ZRG1 CVRS-L (80)A Cardiovascular and Respiratory AREA
2017 Reviewer, Penn Medicine Orphan Disease Center Pilot grants
2018 Reviewer, FWF Austrian Science Fund
2018 Scientist Reviewer, TSCRP Department of Defense CDMRP
2018 Reviewer, HVI/VMI Innovator and P3HVB grants, University of Pittsburgh
2019 Reviewer, American Heart Association Career Development Award Vascular Basic Sciences
2019 Reviewer, NIH ZRG1 F10A Physiology and Pathobiology of Cardiovascular and Respiratory Systems
2020 Reviewer, American Heart Association Career Development Award Vascular Basic Sciences
2020 Reviewer, NIH ZRG1 CVRS G (03) Lung Diseases
2020 Reviewer, National Science Centre Poland

2021 AdHoc reviewer, NIH/NHLBI RIBT study section, February 25-26
2021 AdHoc reviewer, NIH/NHLBI RIBT study section, June 24-25
2021 AdHoc reviewer, NIH/NHLBI RIBT study section, October 7-8
2022 AdHoc reviewer, NIH/NHLBI IVPP study section, February 17-18
2022 ATS Early Career Investigator Award in Pulmonary Vascular Disease, March 28
2022 AdHoc reviewer, NIH CVRS-H 03M Respiratory Sciences Special Emphasis Panel, April 7-8
2022 Reviewer, California Northstate University mini grants, May 13, 2022
2022 AdHoc reviewer, NIH/NHLBI IVPP study section, June 21-22

**Editorial Boards Membership:**

2018-present Editorial Board Member, American Journal of Physiology: Lung Cellular and Molecular Physiology
2019-2021 Guest Editor, Frontiers in Medicine; Research Topic "Pulmonary Hypertension in the Modern Era: Science and Clinical Practice".
2020-2021 Review Editor, Frontiers in Cell and Developmental Biology, Cell Growth and Division specialty section.
2020-2021 Guest Editor, International Journal of Molecular Sciences; Research Topic “mTOR Signaling Network in Cell Biology and Human Disease”
2021-present Associate Editor, Frontiers in Cell and Developmental Biology, Cell Growth and Division specialty section.
2021-present Guest Editor, Frontiers in Medicine; Research Topic "Pulmonary Hypertension in the Modern Era: Science and Clinical Practice II".
2022-present Guest Editor, Frontiers in Cell and Developmental Biology; Research Topic “mTOR Signaling in Cell Growth and Metabolism”.

**Ad-Hoc Reviewer, Journals:**

American Journal of Respiratory and Critical Care Medicine (AJRCCM)
American Journal of Respiratory Cell and Molecular Biology (AJRCMB)
American Journal of Pathology (AJP)
American Journal of Physiology: Cell physiology (AJP Cell)
American Journal of Physiology: Lung Cellular and Molecular Physiology (AJP Lung)
Atherosclerosis, Thrombosis & Vascular Biology (ATVB)
Biochemical Genetics
British Journal of Pharmacology (BJP)
Cancer Research
Cancer Detection and Prevention
Cardiovascular Research
Cell Proliferation
Circulation
Circulation: Genomics and Precision Medicine
Circulation: Heart Failure
Circulation Research
EMBO Molecular Medicine
Experimental Lung Research
European Journal of Pharmacology
European Respiratory Journal

FEBS Letters
Frontiers in Cell and Developmental Biology
Frontiers in Physiology
JACC Basic Translational Research
Journal of Allergy
Journal of American Heart Association (JAHA)
Journal of Cellular Biochemistry
Journal of Cellular Physiology
Journal of Clinical Investigation (JCI)
Journal of Molecular and Cellular Cardiology
Hypertension
International Archives of Allergy and Immunology
International Journal of Molecular Science
Molecular Pharmacology
PlosOne
Pulmonary Circulation
Respiratory Research
Scientific Reports
Science Translational Medicine
Thorax
Translational Research

**SERVICE:**

**University and Medical School:**

University of Pennsylvania:

2011 Chair, Symposium "Lung Inflammation" 17th Annual Respiratory Research Retreat, University of Pennsylvania, Villanova, PA

2012-2013 Member, Planning committee, Pulmonary, Allergy and Critical Care Division Research Conferences, University of Pennsylvania DOM

University of Pittsburgh:

2013-2020 Founding Director, VMI Cell Processing Core, University of Pittsburgh DOM

2013-2020 Founding Director, VMI Animal Hypoxic Core, University of Pittsburgh DOM

2018-2020 Member, PACCM Award Committee, University of Pittsburgh DOM

2018-2020 Program Director, VMI Postdoctoral Scholar Award, University of Pittsburgh DOM

2018-2020 VMI Executive Committee, University of Pittsburgh DOM

2019-2020 HVI/VMI Seven Springs Fellows Retreat Organizing Committee

University of California, Davis:

2020-2021 Member, Division of Pulmonary, Critical Care and Sleep Medicine Chief Search Committee

2020-2021 Chair, 2021 UC Davis Lung Day Organizing Committee

2021- Member, Research Committee, Department of Internal Medicine, UC Davis Health

2021- Member, Research Core Advisory Council (RCAC), UC Davis Office if Research

2022- Member, Division of Pulmonary, Critical Care and Sleep Medicine Clinical Assistant/Associate/Full Professor Search Committee