





## Third Year Fellows (2015-2018)

	<p><b>John S. Harrington, MD</b>  <b>BS:</b> Johns Hopkins University  <b>MD:</b> SUNY Upstate Medical University  <b>Residency:</b> Johns Hopkins Medicine</p> <p><a href="#">Research Profile and Publications</a></p>
	<p><b>Alexandra C. Racanelli, MD, PhD</b>  <b>BS:</b> University of Mary Washington  <b>MD, PhD:</b> Virginia Commonwealth University School of Medicine  <b>Residency:</b> NewYork-Presbyterian Hospital/Weill Cornell Medical Center</p> <p><a href="#">Research Profile and Publications</a></p>
	<p><b>Cristobal Risquez, MD</b>  <b>BS/MD:</b> Universidad Central de Venezuela College of Medicine  <b>Residency:</b> University of Miami/Jackson Memorial Hospital</p> <p><a href="#">Research Profile and Publications</a></p>
	<p><b>Lisa K. Torres, MD<sup>#</sup></b>  <b>BS:</b> Texas A&amp;M University  <b>MD:</b> Royal College of Surgeons in Ireland  <b>Residency:</b> McGovern Medical School at UTHealth</p> <p><a href="#">Research Profile and Publications</a></p>

<sup>#</sup>: Chief Fellow



## John S. Harrington, MD

### Research Interests

My research is focused on mitochondrial DNA in critical illness -- namely the association between the biomarker and clinical outcomes. Mitochondrial DNA is released in the setting of cell injury or death. My research is thus focused on determining whether or not mitochondrial DNA portends mortality in critical ill patients. To that end, we have recently launched a multi-center trial comparing mitochondrial DNA to point of care lactate in patients presenting to the Emergency Department with sepsis.

**Mentors:** Augustine MK Choi, MD, Ilias I. Siempos, MD, PhD, and Edward Schenck, MD.

### Publications, Talks, and Awards

#### PUBLICATIONS

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1. **Harrington JS**, Choi AMK, Nakahira K. Mitochondrial DNA in Sepsis. *Curr Opin Crit Care*. 2017 Aug;23(4):284-290.
2. **Harrington JS**, Zappetti D. Treatment of Mycobacterium Avium Complex Lung Disease With Clofazamine. *Clin Pulm Med*. 2016 Sept;23(5):237-238

#### ABSTRACTS

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1. **Harrington JS**, Huh JW, Schenck E, Nakahira K, Siempos I, Choi AMK. Circulating Mitochondrial DNA as a Predictor of Mortality in Critically Ill Patients. Weill Cornell-National Heart Lung Institute- Imperial College Joint Academic Meeting. Weill Cornell Medicine, New York, NY 2017.



## Alexandra C. Racanelli, MD, PhD

### Research Interests

My previous research interest focused on transcriptional, epigenetic, and cellular signaling events involved in the efficacy of targeted cancer therapeutics. As a resident, I became interested in the disease processes associated with pulmonary and critical care medicine, with a particular interest in pulmonary vascular disease. The dysfunctional state of pulmonary vascular endothelial cells (ECs), namely arterial, in human pulmonary hypertension tissues is well established, but whether this change initiates or is a consequence of disease progression remains unclear. Non-canonical functions of vascular ECs as drivers of organ regeneration and repair have been illustrated in multiple organs. Our collaborators Drs. Shahin Rafii and Bi-Sen Ding, pioneered this field and defined the importance of the instructive vascular niche created by ECs, but also linked dysregulated ECs to maladaptive repair such as fibrosis and tumorigenesis. I am currently using a hypoxia mouse model to assess if dysregulated ECs drive release of aberrant angiocrine factors that create a maladaptive vascular niche which promotes the development of pulmonary vascular disease in humans.

**Mentors:** Augustine MK Choi, MD

### Publications, Talks, and Awards

#### PUBLICATIONS

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1. **Racanelli AC**, Zappetti D, A Lifestyle Modification Program Associated With Weight Loss Reduces the Severity of OSA. *Clin Pulm Med*. 2016, 23(2):95-96.
2. Satlin MJ, Soave, R, **Racanelli AC**, Shore TB, Beisien K, Jenkins SG, Walsh TJ. The Emergence of Vancomycin-Resistant Enterococcal Bacteremia in Hematopoietic Stem Cell Transplant Recipients. *Leuk Lymphoma*. 2014, 0(1): 1-8. PMID: 24559288.
3. Rothbart SB, **Racanelli AC**, Moran RG. Pemetrexed indirectly activates the metabolic kinase AMPK in human carcinomas. *Cancer Res*. 2010, 70(24):10299-309. PMID: 21159649
4. **Racanelli AC**. 2009 Transcriptional, signaling, and epigenetic events in antifolate therapeutics. Dissertation, <http://hdl.handle.net/10156/2585>.
5. **Racanelli AC**, Rothbart SB, Heyer CL, Moran RG. Therapeutics by Cytotoxic Metabolite Accumulation: Pemetrexed Causes ZMP Accumulation, AMPK Activation, and Mammalian Target of Rapamycin Inhibition. *Cancer Res* 2009. 69(13):5467-74. PMID: 19549896
6. **Racanelli AC**, Turner FB, Xie LY, Taylor SM, Moran RG. A mouse gene that coordinates epigenetic controls and transcriptional interference to achieve tissue-specific expression. *Mol Cell Biol*. 2008, 28(2):836-48. PMID: 1799833

7. Motwani, MV, **Racanelli AC**, Schwartz GK. Flavopiridol potentiates effect of oxaliplatin in vitro and in vivo and requires intact p53. *J Clin Oncol*. 2004, 22(14S):3145

## ABSTRACTS

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1. **Racanelli AC**, Wu X, Hayward B. Sjogren's syndrome presenting as severe obstructive airway disease. New York State Thoracic Society Annual Assembly 2017. NYSTS 2017.
2. Ma KC, **Racanelli AC**, Lizardi MT, DeSimone RA, Sanders A. Recurrent Pneumocystis jirovicii Pneumonia Presenting as Necrotizing Granulomatous Disease with Diffuse Pulmonary Nodules. 2017 ATS International Conference. ATS 2017
3. Baduashvili, A, Bender MT, Marcus EA, **Racanelli AC\***, West B, Eiss BM, Carmel AL. 2013. Talking “the talk”: a pilot quality improvement project to increase advance directive conversations in a resident outpatient clinic. Submitted to Symposium on engaging residents in quality improvement by Greater New York Hospital Association for presentation September 2013. \*presenter
4. Rothbart SB, **Racanelli AC**, Moran RG. Pemetrexed induces a strong activation of AMPK in human carcinoma cells, even in the absence of LKB1. Abstract, poster presented at Annual Proceedings of the American Association of Cancer Research, Washington D.C 2010.
5. Rothbart SB, **Racanelli AC**, Moran RG. Activation of AMPK by antifolates leads to mTORC1 Inhibition in Human Carcinoma Cells. Abstract selected for presentation at American Association of Cancer Research: Metabolism and Cancer meeting, San Diego, CA 2009.
6. **Racanelli AC**, Turner FB, Xie LY, Taylor SM, Moran RG. Tissue-specific patterns of epigenetic modifications down the length of a two-promoter gene: intertwining control mechanisms. Abstract, poster presented at Gordon Research Conference: Chromatin Structure and Function. Il Ciocco, Italy. 2008
7. **Racanelli AC**, Turner FB, Taylor SM, and Moran RG. Epigenetics and transcriptional interference controlling the tissue-specific expression of the mouse fpgs gene. Abstract, poster presented at Annual Proceedings of American Association for Cancer Research, Washington, D.C. 2006
8. Ameen LC, Kaliszewski K, and **Racanelli AC**. Mitogenic Activity of Lipoteichoic Acid on Eukaryotic Epithelial Cells. Abstract, poster presented at American Society of Microbiology Annual Meeting, Washington D.C. 2003
9. **Racanelli AC** and Ameen L. The effects of lipoteichoic acid on ME-180 cervical carcinoma cells. Abstract, poster presented at the American Society for Microbiology regional meeting, Hampden-Sydney, VA. 2000

## ORAL PRESENTATIONS

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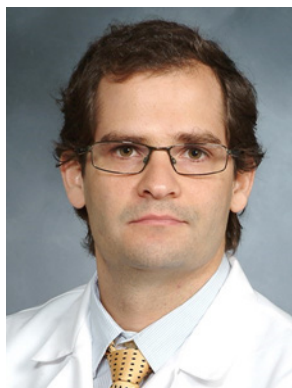
1. A young man with chest wall mass. *Joint Case Conference. NYPH-Weill Cornell Medicine*, May 2016.

2. The Emergence of Vancomycin-Resistant Enterococcal Bacteremia in Hematopoietic Stem Cell Transplant Recipients. *David Roger's Research Award Symposium, Weill Cornell Medicine*, 2014
3. Talking "the talk": a pilot quality improvement project to increase advance directive conversations in a resident outpatient clinic. *Symposium on engaging residents in quality improvement by Greater New York Hospital Association* 2013.
4. Epigenetic mechanisms and poised elongating RNA polymerase II complexes in the tissue-specific expression from the mouse fpgs gene. *American Cancer Society Regional Meeting*, Richmond, VA. 2007
5. Growth-factor like activity on cervical and prostate cells. *Virginia Academy of Science Symposium*, Harrisonburg, VA. 2001

#### **HONORS/AWARDS**

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2014	<b>First Runner Up</b> , David Roger's Research Award, Weill Cornell Medicine
2013	<b>Finalist</b> , Quality Improvement Symposium, Greater New York Hospital Assoc.
2010	<b>Alpha Omega Alpha</b> , VCU School of Medicine
2008-	<b>Ruth L. Kirschstein National Research Service Award</b> (F30 HL094068),
2011	National Institute of Heart, Lung, and Blood
2007	<b>Phi Kappa Phi</b> , University of Mary Washington



## Cristobal Riquez, MD

### Research Interests

Research: Idiopathic pulmonary fibrosis (IPF) is a chronic debilitating disease with few treatment options, and a median survival of 3 years. The pathophysiology of this disease is characterized by an inflammatory response that includes macrophages, neutrophils, lymphocytes, and mast cells. Mast cells are closely apposed to fibroblasts in fibrotic tissue. We hypothesize that mast cell exosomes, shedded vesicles ranging in size from 20-100 nm, are taken up by fibroblasts and contribute to the pathophysiology of fibrotic lung disease, independent of a TGF- $\beta$  receptor-mediated fibrogenic pathway. My experiments involve isolating enriched fractions of exosomes derived from cultured human mastocytoma cells exposed to bleomycin, a known fibrogenic chemotherapeutic agent. Freshly isolated human lung fibroblasts are exposed to these exosomes and newly formed collagen is measured in lysates as an indicator of fibrogenic potential. My results will provide a greater understanding of how mast cells and fibroblasts work in tandem to promote pathological collagen deposition as in IPF. It is our hope that our findings open up new therapeutic options to treat this class of fibrotic pulmonary disorders.

**Mentors:** Randi Silver, PhD and Robert Kaner, MD

### Publications, Talks, and Awards

#### PUBLICATIONS

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1. Singh I, Mikita G, Green D, **Riquez C**, Sanders A. Pulmonary Extra-medullary Hematopoiesis and Pulmonary Hypertension From Underlying Polycythemia Vera: A Case Series. *Pulm Circ*. Accepted for publication: December 13, 2016.
2. **Riquez C**, Zappetti D. The Safety of Fluticasone-Salmeterol in Patients With Moderate to Severe Asthma. *Pulmonary Trends. Clin Pulm Med*: 2016 23(5):238–239.
3. Cui Y, Osorio JC, **Riquez C**, Wang H, Shi Y, Gochuico BR, Morse D, Rosas IO, El-Chemaly S.. Transforming growth factor- $\beta$ 1 downregulates vascular endothelial growth factor-D expression in human lung fibroblasts via the Jun NH2-terminal kinase signaling pathway. *Mol Med*. 2014 Mar; 20(1): 120-34. PMID: 24515257.
4. Shi Y, Gochuico BR, Yu G, Tang X, Osorio JC, Fernandez IE, **Riquez CF**, Patel AS, Shi Y, Wathélet MG, Goodwin AJ, Haspel JA, Ryter SW, Billings EM, Kaminski N, Morse D, Rosas IO. Syndecan-2 Exerts Antifibrotic Effects by Promoting Caveolin-1-mediated Transforming Growth Factor- $\beta$  Receptor I Internalization and Inhibiting Transforming Growth Factor- $\beta$ 1 Signaling. *Am J Respir Crit Car Med*. 2013 Oct; 88(7): 831-41. PMID: 23924348.

#### ABSTRACTS

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1. **Riquez C**, Leif L. Late onset pulmonary manifestation of IBD. *New York State Thoracic Society Meeting 2017*; New York, NY.
2. **Riquez CF**, Singh I., Sanders A., When the JAK fails the pump. *CHEST meeting Los Angeles California*. October 2016.

3. Singh I, **Risquez C**, Kaner RJ. Disconcordant Radiographic Evolution in an Atypical Presentation of Interstitial Lung Disease. *6th Annual New York Inter-City Pulmonary Fellow's Symposium*. April 1, 2016
4. Patel AS, Doyle TJ, Liu Y, Hatabu H, Nishino M, Okajima Y, **Risquez C**, Shi Y, Osorio JC, Golzarri MF, Lederer JA, Pinto-Plata VM, Celli BR, Hunninghake GM, Washko GR, Sciurba FC, Kaminski N, Leader JK, Siegfried JM, Weissfeld JL, Rosas IO. A Peripheral Blood Biomarker Signature Potentially Identifies Smokers with Interstitial Lung Abnormalities. *CHEST Meeting*. 2013 Oct.
5. **Risquez CF**, Santos-Falcon N, Salathe M, Infante J, Fishman J, Whitney P, Mendes ES, Holt GE, Donna E, Cadet L, Wanner A, Campos MA. Clinical, Physiologic And Anatomical Correlations Of Shortened Cilia Length In Smokers. *2013 American Thoracic Society Annual Meeting* 2013.
6. Shi Y, Stout-Delgado HW, Mihalek AD, **Risquez CF**, Osorio JC, Rosas IO. Aging Potentially Enhances Bleomycin-Lung Inflammation And Fibrosis Via Alveolar Macrophage NLRP3 Inflammasome Activation. *2012 American Thoracic Society Annual Meeting*. 2012.
7. **Risquez CF**, Patel A, Osorio JC, Fernandez IE, Goodwin A, Shi Y, Tang X, Morse D, Rosas IO, Shi Y. Syndecan-2 And CCL2 Interactions Promote Alveolar Macrophage Recruitment During Acute Lung Injury. *2012 American Thoracic Society Annual Meeting*. 2012
8. Patel A, Doyle TJ, Shi Y, Liu Y, Hatabu H, Nishino M, Okajima Y, Fernandez IE, **Risquez CF**, Osorio JC, Rosas IO. Syndecan-2 Plasma Levels Potentially Identify Smokers With Interstitial Lung Abnormalities. *2012 American Thoracic Society Annual Meeting*. 2012.
9. Fernandez IE, Shi Y, **Risquez C**, Goodwin A, Patel A, Velez C, Sholl L, M Cernadas M, Belinsky S, Morse, D and Rosas IO.. Syndecan-2 Expression Promotes Resistance to TGF- $\beta$  Induced Apoptosis and Enhances Malignant Features In A549 Cells. *2011 American Thoracic Society Annual Meeting*. 2011

## ORAL PRESENTATIONS

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1. Risk Factor: Salsa. *ACP Florida Chapter 2013*; Orlando, FL
2. An unusual case of diffuse alveolar hemorrhage. *New York State Thoracic Society Meeting 2016*; New York, NY.
3. Mast Cell Exosomes and Pulmonary Fibrosis. Joan and Sanford Weill Department of Medicine Grand Rounds, New York, NY. June 2017
4. Mast Cell Exosomes in Cell to Cell Communication: Role in Pulmonary Fibrosis. Weill Cornell- National Heart Lung Institute- Imperial College Joint Academic Meeting. Weill Cornell, New York, NY. 2017
5. Mast Cell Exosomes. Annual Respiratory Disease Young Investigator's Forum. Denver, CO. 2017

## HONORS/AWARDS

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2016	<b>Finalist</b> , Award for the Top 3 Presentations. New York State Thoracic Society Fellow's Forum
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## Lisa K. Torres, MD

### Research Interests

From the time I completed my undergraduate education, I've been fortunate to have exposure to various immunological models of illness. Host regulation of pro-inflammatory and anti-inflammatory responses is a key factor in the development of disease. This fine balance is also crucial for recovery from critical illness. During sepsis patients first enter a pro-inflammatory phase, followed by an anti-inflammatory phase, and then homeostasis. When septic patients continue in a persistent and pathologic anti-inflammatory state, they are known as immunoparalyzed. Consequently, these patients are at a higher risk for opportunistic infections and mortality. A complete understanding of the underlying mechanisms driving immunoparalysis remain poorly understood. Cellular metabolic defects and impaired expression of crucial cytokines has been described. Currently, I am expanding on these findings by assessing the degree of metabolic disarray and immunoparalysis in leukocytes of septic patients. Ultimately, we aim to predict who may develop immunoparalysis and identify therapeutic targets to restore normal immune function in the critically ill.

**Mentors:** Augustine MK Choi, MD, Suzanne Cloonan, PhD, and Ilias Siempos, MD, PhD

### Publications, Talks, and Awards

#### PUBLICATIONS

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1. **Torres LK**, Choi AMK. Determination of Early Immune Function in Sepsis and Its Influence on Organ Dysfunction – Is a More Pragmatic Outcome on the Horizon? *Am J Respir Crit Care Med*. 2018 Mar 20. doi: 10.1164/rccm.201803-0470ED. [Epub ahead of print]
2. **Torres LK**, Zappetti D. Continuous Positive Airway Pressure Does Not Prevent Cardiovascular Events in Patients with Moderate-to-Severe Sleep Apnea and Cardiovascular Disease. *Clin Pulm Med*. 2017 Jan;24(1):55-56.
3. **Torres LK**, Faiz SA. Tattoos and Sarcoidosis. *N Engl J Med*. 2014 Jun 5;370(23):e34
4. Zhou C, Wu J, **Torres L**, Hicks JM, Bartkowiak T, Parker K, Lou YH. Blockade of osteopontin inhibits glomerular fibrosis in a model of anti-glomerular basement membrane glomerulonephritis. *Am J Nephrol*. 2010 Aug 19;32(4):324-331.
5. Merszei J, Wu J, **Torres L**, Hicks JM, Bartkowiak T, Tan F, Lou YH. Osteopontin overproduction is associated with progression of glomerular fibrosis in a rat model of anti-glomerular basement membrane glomerulonephritis. *Am J Nephrol*. 2010;32(3):262-271.
6. Zhou C, Wu J, Borillo J, **Torres L**, McMahon J, Lou YH. Potential roles of a special CD8 alpha alpha+ cell population and CC chemokine thymus-expressed chemokine in ovulation related inflammation. *J Immunol*. 2009 182(1):596-603

7. Adrogué HE, Borillo J, **Torres L**, Kale A, Zhou C, Feig D, Merzsei J, Johnson R, Lou YH. Coincident activation of Th2 T cells with Onset of the Disease and Differential Expression of GRO-gamma in Peripheral Blood Leukocytes in Minimal Change Disease. *Am J Nephrol*. 2007 27(3):253-261
8. Robertson J, Wu J, Arends J, Zhou C, McMahon J, **Torres L**, and Lou YH. Activation of Glomerular Basement Membrane-Specific B Cells in the Renal Draining Lymph Node After T cell-Mediated Glomerular Injury. *J. Am Soc Nephrol* 2005 16(11):3256-63
9. Zhou C, Wu J, Borillo J, **Torres L**, McMahon J, Bao Y, and Lou YH. Transient Expression of CC Chemokine TECK in the Ovary During Ovulation: Its Potential Role in Ovulation. *Amer. J. Reprod. Immunol*. 2005 53(5):238-248
10. Zhou C, Borillo J, Wu J, **Torres L**, Lou YH. Ovarian Expression of Chemokines and their Receptors. *J. Reprod. Immunol*. 2004 63(1):1-9

## ABSTRACTS

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1. **Torres LK**, Aronson K, Turetz M, and Zappetti D. Paradoxical adalimumab-induced sarcoidosis. *2017 American Thoracic Society International Conference*. ATS 2017
2. **Torres LK**, Jones DS, and Turetz M. Spontaneous resolution of sarcoidosis with necrotizing sarcoid granulomatosis in a young man. *2017 American Thoracic Society International Conference*. ATS 2017
3. Ma KC, **Torres LK**, Shostak E, Harvey BG. Late Diagnosis of Endobronchial Tuberculosis Leading to Tracheal Stenosis and Left Lung Collapse. *2017 American Thoracic Society International Conference*. ATS 2017
4. **Torres LK** and Guy E. An Unusual Cause of Shock. *New York State Thoracic Society Annual Assembly 2016*. 2016.

## ORAL PRESENTATIONS

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1. A Non-smoker with Cough and Weight Loss. *Inter-City Fellows Symposium*. April 1, 2016. New York, NY.

## HONORS/AWARDS

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2017-2018	<b>Chief Fellow</b> , Division of Pulmonary and Critical Care Medicine, Weill Cornell Medicine
2016	<b>Fellow of the Year</b> , As selected by the Weill Cornell Medicine Department of Internal Medicine Housestaff
2014-2015	<b>Chief Medical Resident</b> , Department of Internal Medicine, McGovern Medical School at UTHealth
2015	<b>Alpha Omega Alpha</b> , McGovern Medical School at UTHealth Delta Chapter
2014	<b>Monica Monet Holloway Barrett Award</b> , for exemplifying the professional attributes integrity, excellence in patient care, leadership in community service and kindness of spirit
2014	<b>Alicejane Argao Humanitarian Award</b> , for compassionate nature, generosity of spirit, enriching the lives of others, and passionate dedication