Faculty Mentors

Faculty in the Emory Division of Pulmonary, Allergy, Critical Care and Sleep Medicine have a long history of working closely with students, residents and fellows on scholarly projects. While not exhaustive, the list below should provide a sense of the breadth of faculty within the Emory Division of Pulmonary, Allergy, Critical Care and Sleep Medicine who are available to serve as mentors, their areas of research interest, and a list of recent projects on which they have worked with trainees. All of these faculty are very enthusiastic about working with trainees in a mentoring capacity.



J. Shirine Allam, MD

Associate Professor of Medicine

I joined the faculty at Emory in 2009 as a clinician educator. My clinical interest and areas of expertise are in sleep medicine and interstitial lung diseases. I am also passionate about education and teaching and am part of the fellowship program leadership team. Specific areas of interest include:
Sleep Medicine: Obstructive and central sleep apnea, advanced modes of positive airway pressure
Education: Feedback – delivery, Evaluation tools, and predictive models for recruitment and mentoring

Current/Past Mentees:
Meredith Greer – Completed a review examining the effect of the SERVE-HF study on the use of ASV

Abstracts and publications with mentees:
Ioachimescu OC, **Allam JS**, Samarghandi A, Anand N, Fields BG, Dholakia SA, Venkateshiah SB, Eisenstein R, Ciavatta MM, Collop NA. Performance of Peripheral Arterial Tonometry Based Testing for the Diagnosis of Obstructive Sleep Apnea in a Large Sleep Clinic Cohort. *Journal of Clinical Sleep Medicine. Journal of Clinical Sleep Medicine (accepted May 28,2020)*

Zahiruddin,F, Chada, A, **Allam,JS** , Fields, B, Dholakia, S, Venkateshiah, SB, Eisenstein, R, Ioachimescu,OC "Point of Care Validation Study of WatchPAT Testing for the Diagnosis of Obstructive Sleep Apnea in a Cohort of Sleep Laboratory Patients", Association of Professional Sleep Societies Annual Meeting San Antonio, TX, June 2019

Greer, M, Ioachimescu, OC, **Allam, JS** "Effect of SERVE-HF on ASV use", CHEST International Conference, New Orleans, LA, October 2019

Oommen, E.*, **Allam JS**, "Ipilimumab Lung Toxicity", CHEST International Conference, Toronto, Canada, October 2017
Desai, N., **Allam JS.** *Tuberous Sclerosis Patient Education Guide* CHEST Foundation and American Lung Association

(https://foundation.chestnet.org/patient-education-resources/tuberous-sclerosis/), published online June 2017



Sara Auld, MD, MSc
Assistant Professor of Medicine and Epidemiology

After spending two years working at the CDC in their global TB group, I came to Emory in 2013 to join the fellowship program and have since stayed on as faculty. My research interests are focused around the global TB and HIV epidemics, including the clinical epidemiology of TB, drug-resistant TB, and TB/HIV coinfection. More recently, I have also begun to explore various aspects of lung health in TB infection, including lung immunology and pulmonary impairment during and after TB infection. I would be happy to meet with trainees about potential projects and explore any interests in these areas.

Current/Past Mentees:
Kristin Harrington (MD/PhD student): Pulmonary symptoms and diseases among people with HIV
Serena Kongara (MPH student): FeNO trends and trajectories in people being treated for HIV and TB
Max Adelman (ID/future CCM fellow): Mortality rates in COVID-19, Timing of intubation in COVID-19

Abstracts and publications (*mentees):
Hernandez-Romieu AC*, Adelman MW*, Hockstein MA, Robichaux CJ, Edwards JA, Fazio JC, Blum JM, Jabaley CS, Caridi-Scheible M, Martin GS, Murphy DJ, **Auld SC**. Timing of intubation and mortality among critically ill COVID-19 patients: a single center cohort study. *Under revision at Critical Care Medicine*.

Auld SC, Caridi-Scheible M, Blum JM, Robichaux C, Kraft C, Jacob JT, Jabaley CS, Carpenter D, Kaplow R, Hernandez-Romieu AC*, Adelman MW*, Martin GS, Coopersmith CM, Murphy DJ. ICU and ventilator mortality among critically ill adults with Coronavirus disease 2019. Critical Care Medicine 2020; *Epub ahead of print*.

Auld SC, Maenetje P, Ravimohan S, Weissman D, Ncube I, Mlotshwa M, Ratsela N, Chase W, Vangu MDT, Wallis R, Churchyard G, Kornfeld H, Bisson GP. Declines in lung function after ART initiation in adults with HIV and TB: a potential manifestation of respiratory IRIS. Clinical Infectious Diseases. 2020 Apr 10; 70(8): 1750-1753.

Auld SC, Shah NS, Mathema B, Brown TS, Ismail N, Omar SV, Brust JCM, Nelson KN, Narechania A, Allana S, Campbell A, Mlisana K, Moodley P, Gandhi NR. Extensively drug-resistant tuberculosis transmission in KwaZulu-Natal, South Africa: an integrative analysis of epidemiologic and genomic links. The European Respiratory Journal. 2018; 52(4).

Shah NS, **Auld SC**, Brust JCM, Mathema B, Ismail N, Moodley P, Mlisana K, Allana S, Campbell A, Mthiyane T, Morris N, Mpangase P, van der Muelen H, Omar SV, Brown TS, Narechania A, Shaskina E, Kapwata T, Kreiswirth B, Gandhi NR. Transmission of Extensively Drug-resistant Tuberculosis in South Africa. New England Journal of Medicine 2017; 376:243-53.



Nancy Collop, MD
Professor of Medicine
Director, Emory Sleep Center

I arrived at Emory in 2010 from Johns Hopkins and prior to that, held faculty positions at University of Mississippi and MUSC. I am the director of the Emory Sleep Center, which is an independent cost center and part of Emory Healthcare and Emory University. I am also the Editor of the Journal of Clinical Sleep Medicine (JCSM) and section editor (Sleep) for UpToDate. The Emory Sleep Center is located at 12 Executive Park. The Emory Sleep Center has 12 faculty members (7 MD's, 2 PhD's, 3 APP's), and includes 9 sleep laboratory bedrooms, home sleep apnea testing and a durable medical equipment program/company. In fall of 2020, the ESC will also be managing the Emory Johns Creek sleep laboratory. In 2012, we initiated our sleep medicine fellowship program which accepts 4 fellows per year.
My area of scholarly interest is in diagnosing and treatment of sleep disorders with a special interest in sleep disordered breathing. I am interested in new technologies to diagnose and monitor sleep and sleep disorders.
Research Papers with mentees

- Wong AI, Cheung PC, Happ MB, Gay PC, **Collop NA** Consequences and Solutions for the Impact of Communication Impairment on Noninvasive Ventilation Therapy for Acute Respiratory Failure: A Focused Review. Crit Care Explor. 2020 Jun 15;2(6):e0121.
- Ioachimescu OC, Allam JS, Samarghandi A, Anand N, Fields BG, Dholakia SA, Venkateshiah SB, Eisenstein R, Ciavatta MM, **Collop NA**. Performance of peripheral arterial tonometry based testing for the diagnosis of obstructive sleep apnea in a large sleep clinic cohort. J Clin Sleep Med. 2020 Jun 9.
- Oh MS, Bliwise DL, Smith AL, **Collop NA**, Quyyumi AA, Dedhia RC. Obstructive sleep apnea, sleep symptoms, and their association with cardiovascular disease. Laryngoscope. 2020 Jun;130(6):1595-1602.
- Lam AS, **Collop NA**, Bliwise DL, Dedhia RC. Validated Measures of Insomnia, Function, Sleepiness, and Nasal Obstruction in a CPAP Alternatives Clinic Population. J Clin Sleep Med. 2017 Aug 15;13(8):949-957.
- Fraser CL, Bliwise DL, Newman NJ, Lamirel C, **Collop NA**, Rye DB, Trotti LM, Biousse V, Bruce BB. A Prospective Photographic Study of the Ocular Fundus in Obstructive Sleep Apnea. J Neuroophthalmol. 2013;33(3):241-6.



Sushma K. Cribbs, MD, MSc, ATSF
Associate Professor of Medicine
Associate Program Director, Pulmonary and Critical Care Medicine Fellowship Staff Physician Atlanta VA Medical Center

I joined the faculty at Emory in 2009 as a physician-scientist focused on HIV-related lung disease. I have extensive experience in clinical-translational research related to host immunity in HIV and have now expanded to other areas including metabolomics, lung microbiome, Mycobacterium Tuberculosis, and other chronic lung diseases such as chronic obstructive lung disease (COPD). I am also passionate in career development and have mentored undergraduate, graduate and post-graduate trainees both in clinical and scientific arenas. I have a strong presence at ATS and am very involved in career development activities for ATS. I would be happy to meet to discuss research ideas, or general career development goals.

Recent projects and publications with mentees:

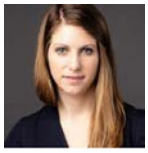
- Alyssa Monda (PhD nursing student): Disparities in sepsis-related mortality in people living with HIV.
- Charles Terry, MD (Pulm/CCM fellow, MSCR mentee): HIV protease inhibitors associated with pulmonary function abnormalities in people living with HIV (publications pending)
- Samantha Yeligar, PhD (post-doctoral fellow): "HIV infection induces alveolar macrophage dysregulation of PPARg, NADPH oxidases and TGFb1 in otherwise healthy individuals". Published in AIDS Research and Human Retroviruses and available at: https://pubmed.ncbi.nlm.nih.gov/28314381
- Caroline Tse, MD (IM resident): "Characteristics and Outcomes of HIV-Infected Patients With Severe Sepsis: Continued Risk in the Post-Highly Active Antiretroviral Therapy Era." Published in Crit Care Med and available at: http://www.ncbi.nlm.nih.gov/pubmed/25853590
- Freny Nirappil, MD (IM resident): "Characteristics and outcomes of HIV-1-infected patients with acute respiratory distress syndrome." Published in J Crit Care and available at: http://www.ncbi.nlm.nih.gov/pubmed/25466320
- Carmen Polito, MD, MSc (Pulm/CCM fellow): "Navigating the institutional review board approval process in a multicenter observational critical care study." Published in Critical Care Medicine and available at: http://www.ncbi.nlm.nih.gov/pubmed/24368345

Recent abstracts with mentees:

- C Terry, CC Mehta, A Sheth, I Ofotokun, BS Staitieh, DM Guidot, SK Cribbs. "HIV protease inhibitors associated with pulmonary function abnormalities among Atlanta WIHS women". ATS 2020.
- MK Abril, B Rapaka, S KagboKue, SK Cribbs. "Pneumocystis Jirovecii Pneumonia as a presentation of Idiopathic CD4 Lymphocytopenia". CHEST 2019.
- JE Han, SK Cribbs, DM Guidot, V Tangpricha, GS Martin, LA Brown. "Ex Vivo Vitamin D Stimulation of Alveolar Macrophage Phagocytosis in People Living with HIV, Stratified by Smoking Status". ATS 2019.
- C Cook, SK Cribbs, M Ahmed, X Fan, DM Guidot, BS Staitieh. "HIV-1 Transgene Expression Induces Prostanoid Signaling Dysfunction in Rat Alveolar Macrophages". ATS 2019.
- K Uppal, A Morris, V Tran, L Huang, L Tipton, E Ghedin, D Jones, and SK Cribbs. "Correlation of Lung Microbiota with Metabolomic Profiles and Pulmonary Function Tests in Bronchoalveolar Lavage Fluid in HIV Infection", ATS 2017.
- SM Yeligar, SK Cribbs, DM Guidot, and LA Brown. "Dietary Supplementation with S-adenosylmethionine and Zinc Attenuates HIV-Induced Alveolar Macrophage Phagocytic Dysfunction", ATS 2016.
- A Chaudhry, R Saghafi, R Neuman, and SK Cribbs. "Bedside Critical Care Echocardiography Revealing an Unsuspected Diagnosis", CHEST 2014.

Recent reviews/book chapters with mentees:

- JE Han, SK Cribbs, GS Martin (2015). "Sepsis, Severe Sepsis and Septic Shock". In JB Hall, GA Schmidt, and JP Kress (Eds), Principles of Critical Care, Fourth Edition (562-75). USA; the McGraw-Hill Companies, Inc.



Lisa Daniels, MD
Assistant Professor of Medicine
Assistant Program Director, Critical Care Medicine Fellowship Clerkship
Director, Critical Care Medicine

Dr. Daniels joined faculty in 2017. Her main research interests are in the areas of medical education, ultrasound and simulation. Her research is focused on development and use of low fidelity procedural models used in the education of medical trainees. Current models include central line access, arterial line access, dialysis line access, extra-corporeal cardiopulmonary membrane oxygenation (ECMO) access, thoracentesis and chest tube placement.

She also has an interest in quality improvement with a focus on improving efficiency in processes and systems that are time sensitive, including massive blood transfusions and extra-corporeal cardiopulmonary resuscitation (ECPR). Other areas of interest include improving the assessment and management of intensive care unit delirium and post intensive care syndrome.

Recent research projects with mentees

- Richard Ramonell MD, Meredith Greer MD, Matthew Schimmel: Sonographic-based Training Analogue Built for Insertion and Guidance of Residents and Interns Training Evaluation (STABInG RITE)

- Richard Ramonell MD, Matthew Wiepking MD, Ashley Binder MD: Low-fidelity gelatin models in the use of procedural simulation training for extra-corporeal cardiopulmonary membrane oxygenation (ECMO) access placement

- Matthew Reaven MD: Teacher or learner: Evaluating the ability of self-directed procedural simulation training in attending physicians

Recent publications

1. Daniels, L.M., et al., *Impact of time to antibiotic on hospital stay, intensive care unit admission, and mortality in febrile neutropenia.* Support Care Cancer, 2019.
2. Nasim, F., et al., *Practical Implementation of Failure Mode and Effects Analysis for Extracorporeal Membrane Oxygenation Activation.* Am J Med Qual, 2018. **33**(5): p. 523-529.
3. Daniels, L.M., et al., *Characterizing Potentially Preventable Admissions: A Mixed Methods Study of Rates, Associated Factors, Outcomes, and Physician Decision-Making.* J Gen Intern Med, 2018. **33**(5): p. 737-744.
4. Daniels, L.M., et al., *Pharmacologic Treatment of Intensive Care Unit Delirium and the Impact on Duration of Delirium, Length of Intensive Care Unit Stay, Length of Hospitalization, and 28-Day Mortality.* Mayo Clin Proc, 2018. **93**(12): p. 1739-1748.
5. Daniels, L.M., et al., *Improving Quality of Life in Patients at Risk for Post-Intensive Care Syndrome.* Mayo Clin Proc Innov Qual Outcomes, 2018. **2**(4): p. 359-369.
6. Daniels, L.M., et al., *Extremely Elevated Erythrocyte Sedimentation Rates: Associations With*

Patients' Diagnoses, Demographic Characteristics, and Comorbidities. Mayo Clin Proc, 2017. **92**(11): p. 1636-1643.
7. Daniels, L.M., et al., *Failure mode and effects analysis to reduce risk of anticoagulation levels above the target range during concurrent antimicrobial therapy.* Am J Health Syst Pharm, 2015. **72**(14): p. 1195-203.
8. Daniels, L.M., J.N. Barreto, and P.K. Tosh, *Supratherapeutic international normalized ratios in warfarin-treated patients who receive a highly potentiating antimicrobial course.* JAMA Intern Med, 2014. **174**(7): p. 1200



Annette Esper, MD, MSc
Associate Professor of Medicine
Section Chief – Pulmonary, Allergy, Critical Care and Sleep Medicine – Grady Memorial Hospital

I joined the faculty at Emory in 2008, primarily based at Grady Memorial Hospital, where I attend on the Pulmonary consult service and in the Medical Intensive Care Unit. After joining the faculty, I obtained my Master of Science in Clinical Research (MSCR) from Emory and since then I have served on the Thesis Committee for multiple MSCR students in addition to mentoring MSCR students.

My research interests include clinical and translational research in critically ill patients, with a specific interest in sepsis and the acute respiratory distress syndrome (ARDS). Currently, my work focuses on conducting biomarker and metabolomics studies in ARDS. I've also conducted and collaborated on work that includes epidemiology research, observational studies, and randomized, controlled trials in critically ill patients.

I'm also the Associate Program Director for the Pulmonary and Critical Care Medicine Fellowship Program and Chair of the Career Development Committee and therefore am very involved in mentoring our fellows.

<u>Recent manuscripts with mentees:</u>
Yang P, Esper AM. Investigating the sex differences in COVID-19: Another step forward, but many unanswered questions [published online ahead of print, 2020 Jun 28]. Clin Infect Dis. 2020; PMID: 32594108

Yang P, Esper AM and Martin GS. The future of ARDS Biomarkers: Where Are the Gaps in Implementation of Precision Medicine? Annual Update in Intensive Care and Emergency Medicine 2020. JL Vincent. Springer Nature, 2020.
Martin R, Esper A, Martin GS. Hematologic Complications. Non-Pulmonary Complications of Critical Care. Richards JB and Stapleton RD (eds.) New York, NY. Springer New York, 2014.
Nirappil FJ, Maheshwari A, Andrews J, Martin GS, Esper AM, Cribbs SK. Characteristics and outcomes of HIV-1 infected patient with acute respiratory distress syndrome. J Crit Care. 2015 Feb;30(1):60-64. Oct 30. PMID:25466320

Prebil S, Andrews J, Cribbs S, Martin GS and Esper AM. Safety of Research Bronchoscopy on Critically Ill Patients. J Crit Care 2014; 29(6):961-964. PMID: 25092617.

Other recent manuscripts:

Siegel DA, Jatlaoui TC, Koumans EH, Kiernan EA, Layer M, Cates JE, Kimball A, Weissman DN, Petersen EE, Reagan-Steiner S, Godfred-Cato S, Moulia D, Moritz E, Lehnert JD, Mitchko J, London J, Zaki SR, King BA, Jones CM, Patel A, Delman DM, Koppaka R; Lung Injury Response Clinical Working Group; Lung Injury Response Epidemiology/Surveillance Group. Update: Interim Guidance for Health Care Providers Evaluating and Caring for Patients with Suspected E-cigarette, or Vaping, Product Use Associated Lung Injury – Unite States, October 2019. MMWR Morb Mortal Wkly Rep. 2019 Oct 18;68(41):919-927. doi: 10.15585/mmwr.mm6841e3. PMID: 31633675.

Lopansri, Bert, Miller, Russell, P. Burke, John, Levy, Mitchell, Opal, Steven, E. Rothman, Richard, D'Alessio, Franco, Sidhaye, Venkataramana, Balk, Robert, A. Greenberg, Jared, Yoder, Mark, P. Patel, Gourang, Gilbert, Emily, Afshar, Majid, P. Parada, Jorge, Martin, Greg, M. Esper, Annette, Kempker, Jordan, Narasimhan, Mangala, Brandon, Richard. Physician agreement on the diagnosis of sepsis in the intensive care unit: estimation of concordance and analysis of underlying factors in a multicenter cohort. Journal of Intensive Care; 2019; 7:13.
Miller Iii RR, Lopansri BK, Burke JP, Levy M, Opal S, Rothman RE, D'Alessio FR, Sidhaye VK, Aggarwal NR, Balk R, Greenberg JA, Yoder M, Patel G, Gilbert E, Afshar M, Parada JP, Martin GS, Esper AM, Kempker JA, Narasimhan M, Tsegaye A, Hahn S, Mayo P, van der Poll T, Schultz MJ, Scicluna BP, Klein Klouwenberg P, Rapisarda A, Seldon TA, McHugh LC, Yager TD, Cermelli S, Sampson D, Rothwell V, Newman R, Bhide S, Fox BA, Kirk JT, Navalkar K, Davis RF, Brandon RA, Brandon RB. Validation of a Host Response Assay, Septicyte Lab, for Discriminating Sepsis from SIRS in the ICU. Am J Respir Crit Care Med. 2018. PMID: 29624409.



Charles J. Grodzin, MD
Assistant Professor of Medicine
Pulmonary, Critical Care, Allergy and Sleep Medicine

I came to Emory in July 2014. I have a strong background in general pulmonary medicine and attend clinical services at Emory University Hospital Midtown in the outpatient clinic as well as the pulmonary medical consult service and in the medical 71 ICU. I am the current medical director of the Respiratory Care Department. I am a member of the EUHM Pulmonary Embolism Response Team specifically handling Pulmonary Embolism consultations and developing a pulmonary embolism clinic . I am also a member of multiple quality committees at EUHM.

Into my third full year of my academic career, I am pleased to continue to find enjoyment and satisfaction in sharing my pulmonary and critical care experience with medical students, residents and fellows as we share complex clinical scenarios. I continue to enjoy honing my skills in the educational spotlight both clinically at the bedside and in more traditional didactic settings via lecture or interactive board review style presentations and the creation of new and exciting patient care opportunities. For me it is a joy to share my career experiences and spend time with those in training. In addition, I feel energized by the opportunity to participate in clinical research that affects directly the way we practice on a daily basis. I look to expand my clinical horizons further as opportunities arise.

At this point, I am available to work with students, residents and fellows in the development of teaching and clinical research projects. My goals are to add to the knowledge base, bring therapy to the bedside and share findings for use for the greater medical good. I would love to hear fresh ideas for clinical investigation, novel project or to work with students or trainees to develop projects that are based on their particular interests.



David M. Guidot, MD
Jeffrey R. Pine Chaired Professor of Medicine
Director, Division of Pulmonary, Allergy, Critical Care & Sleep Medicine

My early research focused on basic mechanisms of oxidative stress and has evolved over the years into two related areas; specifically, the effects of chronic alcohol abuse and HIV on lung health. I direct basic laboratory projects in the Whitehead Biomedical Research Building as well as clinical translational projects at the Atlanta VA and Grady. I have mentored more than twenty post-doctoral fellows (including both MD and PhD trainees) and many more residents and students. As a co-director of a training grant from the NIH, this mentoring includes having minority medical students from Morehouse each summer. In parallel, I have mentored Emory medical students through the Discovery Phase program and over the years more than thirty medical residents have performed research electives with me.

Current mentees:

Viranuj Sueblinvong, MD (Emory associate professor) – I started working with Viranuj when I became division director in 2009 and mentored her throughout her NIH-funded K08 Career Development Award. We continue to collaborate closely on projects related to alcohol and HIV mediated susceptibility to pulmonary fibrosis and she is moving toward independence with the support of NIH, including a current R03 Award, and is competing for her own R01 funding.

Sushma Cribbs, MD, MSc (Emory Associate Professor) – I began my mentoring relationship with Sushma as she was finishing our fellowship in 2009 when I became division director. I mentored her through her MSCR training and subsequent NIH-funded KL2 Career Development Award. She and I have collaborate on translational research studies in individuals living with HIV and she also has collaborative projects with other investigators.

Bashar Staitieh, MD – (Emory assistant professor) – Bashar joined my laboratory for his research training during his fellowship training here at Emory and was supported by our NHLBI-funded T32. He subsequently joined the faculty and is currently supported by an NIH-funded K08 Career Development Award that focuses on the mechanisms by which alcohol and HIV impair alveolar macrophage immune functions.

Recent mentees on our faculty include:

Wendy Neveu, MD, PhD – I mentored Wendy during her extended research fellowship in the ABIM Research Track that was supported by our NIH-funded T32 as well as the Department of Medicine. Wendy applied her previous PhD training in basic immunology to studies of how alcohol induces fibroblast-to-myofibroblast transdifferentiation in the lung and thereby promotes a ‘pro-fibrotic’ phenotype.

Lucian Marts, MD – I mentored Lucian during his 2-year research fellowship that was supported by our NHLBI-funded T32 and he focused on discrete signaling mechanisms by which HIV-related proteins change lung fibroblast phenotypes to make the lung more susceptible to injury and fibrosis.

Abi Kukoyi, MD – I mentored Abi during her 2-year research fellowship with the support of a Minority Supplement from NHLBI and she studied the mechanisms by which HIV-related proteins impair antioxidant defenses and cellular function in the alveolar epithelium.

Selected publications with these current and recent mentees are listed below:

- **Cribbs SK**, Lennox J, Caliendo AM, Brown LA and **Guidot DM:** Healthy HIV-1-Infected Individuals on Highly Active Antiretroviral Therapy Harbor HIV-1 in Their Alveolar Macrophages. **AIDS Res Hum Retroviruses.** 2015 Jan;31(1):64-70.
- **Staitieh BS**, Egea EE, Fan X, Amah A, **Guidot DM.**: Chronic Alcohol Ingestion Impairs Rat Alveolar Macrophage Phagocytosis via Disruption of RAGE Signaling. Am J Med Sci. 2018 May;355(5):497-505.
- **Neveu WA, Staitieh BS**, Mills ST, **Guidot DM and Sueblinvong V**. Alcohol-Induced Interleukin-17 Expression Causes Murine Lung Fibroblast-to-Myofibroblast Transdifferentiation via Thy-1 Down-Regulation. Alcohol Clin Exp Res**.** 2019 Jul;43(7):1427-1438.
- **Marts LT**, **Guidot DM** and **Sueblinvong V**. HIV-1 Protein gp120 Induces Mouse Lung Fibroblast-to-Myofibroblast Transdifferentiation via CXCR4 Activation. Am J Med Sci. 2019 Jun;357(6):483-491.
- **Kukoyi AT**, Fan X, **Staitieh BS**, Hybertson BM, Gao B, McCord JM and **Guidot DM**. MiR-144 mediates Nrf2 inhibition and alveolar epithelial dysfunction in HIV-1 transgenic rats. Am J Physiol Cell Physiol. 2019 Aug 1;317(2):C390-C397.



Jenny Han, MD, MSc
Assistant Professor of Medicine

Dr. Han, who was born in Philadelphia, completed her undergraduate at Northwestern University and began her caregiving career as a substance abuse counselor for teenage girls. She went on to become an EMT and paramedic before attending medical school at Ross University. She graduated with highest honors and then trained in internal medicine at Henry Ford Hospital in Detroit, going on to become chief resident.

During her residency Dr. Han conducted a medical education study for which she received the David C. Leach Award from the Accreditation Council for Graduate Medical Education in 2010. She completed fellowship training in pulmonary and critical care medicine at Emory University, where she served as chief fellow. In addition, she obtained her master's degree in science at Emory Rollins School of Public Health. Currently, she works at Grady Memorial Hospital. Dr. Han actively participates in teaching medical students, residents and fellows at Emory.

Dr. Han's translational and clinical research career has focused on defining the relationship between vitamin D status and infection and the antimicrobial peptide pathway with the overall clinical goal to improve host immunity in immunocompromised patients with respiratory infections.

- Han JE, Martin GS. Rational or rationalized choices in fluid resuscitation? Critical Care 2010;14:1006
- Han JE, Martin GS. Does albumin in fluid resuscitation save lives? Critical Care Medicine 2011;39:418-419
- Kempker JA, Han JE, Tangpricha V, Ziegler TR, Martin GS.Â Vitamin D and sepsis: An emerging relationship.Â DermatoEndocrinology 2012;4:101-108
- Han JE, Trammell AR, Finklea JD, Udoji TN, Dressler DD, Honig EG, Abraham P, Ander DS, Cotsonis GA, Martin GS, Schulman DA. Evaluating Simulation-Based ACLS Education on Patient Outcomes: A Randomized, Controlled Pilot Study. J Grad Med Educ. 2014 Sep;6(3):501-6
- Han JE, Ziegler TR. Vitamin D supplementation in sepsis and critical illness: where are we now? Am J Respir Crit Care Med. 2014 Sep 1;190(5):483-5



C. Michael Hart, MD
Professor of Medicine

I have been a physician-scientist at the Atlanta VA since 2000 where I currently serve as the Associate Chief of Staff for Research. My research interests in lung biology focus on vascular biology. With colleagues referenced below, we are working to build platforms addressing basic to translational research studies in pulmonary hypertension (PH). My lab focuses on basic and translational studies while Drs. Trammell and Fisher focus on clinical and epidemiological studies.

Past Mentees:

Cherry Wongtrakool, MD – received NIH R01 funding focused on nicotine-induced airway remodeling.

David Green, MD – received VA Merit Review funding focused on the role of mitophagy in PH pathogenesis.

Bum-Yong Kang, PhD – received NIH RO1 funding examining mechanisms of PH in sickle cell disease.

Samantha Yeligar, PhD - received NIH RO1 funding examining mechanisms of alveolar macrophage dysfunction during chronic alcohol ingestion.

Current Mentees:

Aaron Trammell, MD – KL-2-funded epidemiological and translational studies of metabolic dysfunction in PH (currently applying for NIH K-23 award).

Victor Tseng, MD – recently received VA career development award to examine the role of hyaluronic acid in PH pathogenesis and therapy.

Representative Abstracts and Publications with Current Mentees (bold):

- **Trammell AW**, and Hart CM. Increased risk of death in underweight and normal weight patients with pulmonary hypertension. Accepted for Presentation at the American Thoracic Society Meeting, Philadelphia, PA, May 2020.
- **Tseng V**, Sylber C, Collum S, Kleinhenz J, Ma J, Sutliff RL, Karmouty-Quintana H, Hart CM. Hyaluronan overload disrupts smooth muscle mitochondrial bioenergetics to drive pulmonary hypertension. Accepted for Presentation at the American Thoracic Society Meeting, Philadelphia, PA, May 2020.
- **Tseng V**, Sutliff RL, Hart CM. The Redox Biology of Peroxisome Proliferator-Activated Receptor Gamma in Pulmonary Hypertension. Antioxidants & Redox Signaling 31(12):874-897, 2019.
- **Trammell AW**, Shah AJ, Phillips LS, Hart CM. Mortality in U.S. veterans with pulmonary hypertension: a retrospective analysis of survival by subtype and baseline factors. Pulmonary Circulation 9(1):2045894019825763, 2019.
- **Tseng V**, Ni K, Allawzi A, Prohaska C, Hernandez-Lagunas L, Elajaili H, Cali V, Midura R, Hascall V, Triggs-Raine B, Petrache I, Hart CM, Nozik-Grayck E. Extracellular superoxide dismutase regulates early vascular hyaluronan remodeling in hypoxic pulmonary hypertension. Sci Rep 10(1): 280; 2020.



Andre Holder, MD
Assistant Professor of Medicine

I'm an assistant professor and clinician scientist in the Division of Pulmonary, Allergy, Critical Care and Sleep Medicine at Emory University. My primary area of research is the development and clinical deployment of advanced data-driven (machine learning) algorithms to predict the evolution of critical illness. More specifically, I study the appropriate timing and use of interventions to prevent or mitigate sepsis and circulatory shock by forecasting the evolution of patient decompensation and organ failure. Other specific areas of clinical and research interest include early sepsis resuscitation, cardiopulmonary resuscitation, the physiology of heart-lung interaction, and functional hemodynamic monitoring.

Current Mentees and Projects

An-Kwok Wong, MD, PhD - *Prediction of Acute Respiratory Failure requiring mechanical ventilation in Advance of Interventions and Treatment (PARFAIT).* The purpose of this project is to create an AI-based algorithm using EMR data to predict noninvasive and invasive mechanical support for acute respiratory failure. His first manuscript on this work has been submitted to Critical Care Medicine for publication.

Past Mentees

Ambreen Merchant, MBBS - *The independent association of mechanical ventilation with septic shock severity.* The purpose of this project was to identify the association between the need for invasive mechanical ventilation and the likelihood of more severe septic shock, defined as the need for more than one vasopressor. This work was accepted as an abstract at the 2020 American Thoracic Society International Conference.

Selected publications

- Douglas IS, Alapat PM, Corl KA, Exline MC, Forni LG, Holder AL, Kaufman DA, Khan A, Levy MM, Martin GS, Sahatjian JA, Seeley E, Self WH, Weingarten JA, Williams M, Hansell DM. Fluid Response Evaluation in Sepsis Hypotension and Shock: A Randomized Clinical Trial. Chest 2020 Apr. Epub ahead of print. PMID 32353418.

- Nemati S, **Holder A**, Razmi F, Stanley MD, Clifford GD, Buchman TG. An interpretable machine learning model for accurate prediction of sepsis in the ICU. *Crit Care Med.* 2018 Apr;46(4):547-553. PMID: 29286945

- Henry JR, Lynch D, Mals J, Shashikumar SP, **Holder A,** Sharma A, Nemati S. A FHIR-Enabled Streaming Sepsis Prediction System for ICUs. *Conf Proc IEEE Eng Med Biol Soc*. 2018 Jul;2018:4093-4096. PMID: 30441256

- Shashikumar SP, Stanley MD, Sadiq I, Li Q, **Holder A**, Clifford GD, Nemati S. Early sepsis detection in critical care patients using multiscale blood pressure and heart rate dynamics. *J Electrocardiol*. 2017 Dec. 50(6):739-743. PMID: 28916175

- **Holder AL**, Overton E, Lyu P, Kempker JA, Nemati S, Razmi F, Martin GS, Buchman TG, Murphy DJ. Serial Daily Organ Failure Assessment Beyond ICU Day 5 Does Not Independently Add Precision to ICU Risk-of-Death Prediction. *Crit Care Med*. 2017 Dec;45(12):2014-2022. PMID: 28906286



William R Hunt, MD
Assistant Professor of Medicine

My clinical and research interests are in cystic fibrosis (CF) and lung transplantation. Specifically, I am very interested in pulmonary consequences of diabetes associated with CF as well as transition processes. While the most obvious transition of care in medicine is the transfer of care from pediatrics to adult-centered care, there are many other transitions such as those patients experience as they move towards transplantation, palliative care and geriatric medicine to name a few. My recent research has focused on exploring objective measures of transition readiness.

Current/Past Mentees:

- Leah Cohen, Emory University- Assessment of FEV1 Variability in Cystic Fibrosis Management
- Haider Ali, Emory University - Assessment of Cystic Fibrosis Bone Mineral Density Pre-Lung Transplant with Post-Lung Transplant Outcomes
- Rebecca Kapolka, Emory University – Social media use and mental health in individuals with cystic fibrosis
- Rebecca Kapolka, Emory University – Large real-world clinical experience with Trikafta

Abstracts and publications with mentees:

- Amratia DA; Hunt WR; Neujahr D; Veeraraghavan S, Incidentally Detected Malignancies in Lung Transplant Explants. *Transplant Direct*, 2019. 5: p. e503.
- Cohen, Leah, Guarner, J., Hunt, William R. A novel presentation of Mycobacterium avium complex in a recipient of a lung transplant: a case report. J Med Case Rep. 2017 Aug 28;11(1):240.
- Ali, H., Ajani, S., Cohen, L.A., Neujahr, D., Hurtik, M., Hunt, W.R. The effect of bone mineral density on lung transplantation outcomes in adults with cystic fibrosis. *Pediatr Pulmonol* 2017; Supplement 47:468-469A
- Middour-Oxler, B., Blair, S.D., Pendley, S., Crews, B.M., Walker, S.D., Stecenko, A., Hunt, W.R. Prospective assessment of transition anxiety and self-perceived readiness in a large CF center. *Pediatr Pulmonol* 2017; Supplement 47:508A
- Wu M, Hunt WR, Putman MS, Tangpricha V. Oral ethinyl estradiol treatment in women with cystic fibrosis is associated with lower bone mineral density. *J Clin Transl Endocrinol*. 2020;20:100223. Published 2020 Mar 19.



Michael F. Iademarco, MD, MPH
Captain, U.S. Public
Health Service
Adjunct Assistant
Professor of Medicine
Director, Center for Surveillance, Epidemiology, and Laboratory Services, CDC

I came to CDC and Emory in 1998 as a medical-epidemiologist and pulmonologist. Since then, I have served in four positions in CDC's Division of Tuberculosis Elimination, as HHS's Health Attach in Hanoi, and throughout as staff physician at the Atlanta VA Medical Center, attending in the MICU. In 2014, I came to lead CDC's Center for Surveillance, Epidemiology, and Laboratory Services, home of iconic scientific services such as MMWR, Vital Signs, The Guide to Community Preventive Services, WONDER, Epi Info, National Notifiable Disease Surveillance System, the National Syndromic Surveillance Program, Office of Public Health Genomics, and Epidemic Intelligence Service. I also hold a joint appointment in the Rollins School of Public Health.

My area of scholarly interest is in tuberculosis, surveillance, diagnostic tests, and public health policy. Trainees who wish to work with me must have an Emory Pulmonary faculty co-mentor; should have an interest in surveillance, epidemiology, laboratory systems, workforce, or public health information dissemination; and be willing to work on research teams. Prior experience in data science and analytic statistical programming would be useful. Alternatively, I am available to a trainee/faculty pair as a consultant.



Imran Iftikhar, MD
Associate Professor of Medicine

I joined the faculty at Emory in 2016 as an Associate Professor and as Section Chief for the Pulmonary section at St. Joseph's. After serving in that role for ~4 years I transitioned to the VA Sleep section. My clinical interest and areas of expertise are in sleep medicine and meta-analyses. I am also passionate about teaching respiratory physiology especially cardiopulmonary exercise stress tests interpretation and interpretation of eucapnic voluntary hyperventilation tests.

Specific areas of interest include:
Sleep Medicine: Obstructive and central sleep apnea, Restless Legs Syndrome
Research: Network comparative meta-analysis, Meta-analysis of Diagnostic Test Accuracy, ad Guidelines development.

Current/Past Mentees:
Meredith Greer
Richard Ramonell
Mathew Schimmel

Recent publications with mentees:

- **Iftikhar IH**, ***Schimmel M***, Sardi A, Mehta I, Musani A. Bronchoscopic Lung Volume Reduction with Valves and Coils: A Network Meta-analysis. Ann Am Thorac Soc. 2020 Jun 23.

- **Iftikhar IH,** ***Greer M***, Wigger G, Collop NA. A Network Meta-analysis of Different PAP interventions in Obesity Hypoventilation Syndrome. Accepted in Journal of Sleep Research (June, 2020)

- ***Richard P Ramonell***, **Iftikhar IH**. Effect of anti-IL5, anti-IL5R, anti-IL13 therapy on asthma exacerbations: A network meta-analysis. Lung, 198(1), 95-103 Feb 2020

- **Iftikhar IH**, ***Greer M***, Jatieh A. A Meta-analysis of Diagnostic Test Agreement between Eucapnic Voluntary Hyperventilation and Cardiopulmonary Exercise Tests for Exercise Induced Bronchoconstriction – *Lung*. 2019 Aug;197(4):483-492.

- **Iftikhar IH**, Teng S, ***Schimmel M***, Duran C, Sardi A, Islam, S. A Network Comparative Meta-analysis of Percutaneous Dilatational Tracheostomies Using Anatomic Landmarks, Bronchoscopic and Ultrasound Guidance versus Open Surgical Tracheostomy. *Lung*. 2019 Jun;197(3):267-275.

- **Iftikhar IH**, ***Schimmel M***, Bender W, Swenson C, Amrol D. Comparative Efficacy of Anti IL-4, IL-5 and IL-13 Drugs for Treatment of Eosinophilic Asthma: A Network Meta-analysis. *Lung*. 2018 Oct;196(5):517-530
- **Iftikhar IH**, ***Roland J***. Obesity Hypoventilation Syndrome. *Clinics in Chest Medicine*. 2018 Jun: 39(2):427-436

- ***Desai N***, **Iftikhar I.** Not So Fast With the Foley Catheter: In Response to Intensive Monitoring of Urine Output in the Critically Ill. *Chest*. 2018 Apr;153(4):1078-1079.
- **Abstracts with mentees:**

- ***Zahiruddin F***, **Iftikhar I**, Hoque R. Narcotic associated bradypnea mimicking central sleep apnea. 33rd Annual Meeting of the Associated-Professional-Sleep-Societies (SLEEP), San Antonio, TX, 08 Jun 2019 - 12 Jun 2019.

- Sayad K, ***Greer MK***, **Iftikhar IH**. Rapidly Progressive Interstitial Lung Disease as the Presenting Finding in Clinically Amyopathic Dermatomyositis. International Conference of the American-Thoracic-Society, Dallas, TX, 17 May 2019 - 22 May 2019.

- ***Mathew Reaven***, Lisa Daniels, William Bender, **Imran Iftikhar.** Old Dog, New Trick: Efficacy of Self-Directed Procedural Training for Attending Physicians. Presented as abstract for Society of Critical Care Medicine 2020 meeting.



Dean P. Jones, PhD
Professor of Medicine
Director, Clinical Biomarkers Laboratory

Dean Jones is a Professor in the Department of Medicine (Pulmonary Division) with secondary appointments in Biochemistry and Pediatrics at Emory University, Atlanta, GA. He received a PhD in Medical Biochemistry from Oregon Health Sciences Univ., Portland, in 1976. He studied nutritional biochemistry at Cornell University and molecular toxicology at the Karolinska Institute as a post-doctoral fellow. He joined Emory University as an Assistant Professor of Biochemistry in 1979, was subsequently promoted to Associate Professor in 1985 and Professor of Biochemistry in 1990. He became Professor of Medicine and Director of the Clinical Biomarkers Laboratory in 2003. He is the Integrated Health Sciences Facility Core Director of the NIEHS- supported HERCULES Exposome Research Center and directs metabolomics cores for NIH-funded programs in Children's Health Exposure Analysis Resource, Red Blood Cell Stability for Transfusion and the Malaria Host-Pathogen Interaction Center. His research career has included studies of mitochondrial mechanisms of toxicity, redox systems biology, oxidative stress and antioxidant systems, compartmentation of metabolism and high-resolution metabolomics. He currently is focused on applications of ultra-high resolution mass spectrometry for precision medicine, with a long-term goal to use this as a foundation to sequence the exposome. These methods allow measurement of thousands of low abundance metabolites, including those derived from the innate metabolism, environment, diet, drugs and microbiome. He has recently focused on low-level environmental exposures, such as dietary cadmium, which can impact onset and progression of chronic diseases, and has active NIH-supported research programs on the metabolomics of cardiovascular, lung, eye, neurodegenerative and infectious diseases and aging. He has extensive collaborations to study diverse populations and disease processes.

Recent trainees he has mentored

- Douglas Walker, PhD candidate studying use of high-resolution metabolomics for biomonitoring environmental exposures and linking exposures to health outcomes
- Ken Liu, PhD candidate studying pharmacometabolomics of adverse drug reactions
- Joshua Chandler, PhD, Post-doctoral fellow studying integrated omics of inflammation-derived oxidants in lung cells and in vivo
- Jolyn Fernandez, PhD, Post-doctoral fellow studying mitochondrial oxidative stress induced by manganese and developing integrated models of redox proteomics, metabolomics and transcriptomics
- Xin Hu, PhD, Post-doctoral fellow studying integrated omics of low-dose environmental cadmium toxicity specifically related to pro inflammatory and profibrotic signaling in the lung

Potential Projects

Many laboratory projects are possible, but a better training structure would probably involve collaboration with Young-Mi Go, PhD, Shuzhao Li, PhD, and/or a clinical scientist using our "omics analytical capabilities to address highly relevant clinical questions. This can be done for almost any of the relevant clinical aspects of the Division, I.e., Pulmonary, Allergy, Critical Care and Sleep Medicine. The main limitation is that the time frame to initiate and complete a clinical protocol usually makes it impractical to do this in its entirety as a Fellow. Hence, we would want to take advantage of ongoing studies, sample repositories and existing data. Given the history of research in the Division and the existing collaborations and interactions with clinical scientists at other institutions, this mostly requires initiative to develop a workable plan.

Publications
A complete list of my published work:
http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/40814271/?sort=date&direction=descending
Or, go to "Google Scholar", enter "Dean P Jones Emory Lung" for papers more relevant to pulmonary research



Bum-Yong Kang, PhD
Assistant Professor of Medicine

I joined Emory University in 2009. I have intensively investigated novel approach microRNA analysis in pathogenesis of pulmonary hypertension (PH), leading not only to successful intra-institutional collaboration but also to research funding to elucidate the role of microRNA of human diseases. I received my Ph.D. in molecular population genetics from Seoul National University, South Korea and was a Postdoctoral Fellows in the Department of Biology at Dalhousie University, Canada (2004-2005) and in the Department of Medicine at University of Arkansas for Medical Sciences (2006- 2009). Currently, my research career focuses on the examination of the mechanisms of PH with sickle cell disease (SCD). Most recently, I have extended my novel work on pulmonary vascular biology and endothelial-to-mesenchymal transition (EndoMT) using miRNAs and long non-coding RNAs (lncRNAs) to the field of hypoxia-induced PH and SCD with PH. My long-term research goal is to create my own model in the pathogenesis of SCD-PH; how does pulmonary vascular remodeling generate in the pulmonary vasculature? To elucidate this question, this model will use integrated–OMICS data: functional genomics, proteomics, microRNAs, long non-coding RNAs, and metabolomics analysis, lead not only to identifying innovative approaches to the treatment of pulmonary vascular disease, but also to clarifying mechanisms by which PPARγ can favorably modulate the expression of proliferative mediators in SCD-PH.

Other recent manuscripts:

- Yeligar SM*****, **Kang BY***, Bijli KM*, Kleinhenz1 JM, Murphy TC, Torres G, San Martin A, Sutliff RL, and Hart CM. PPARγ regulates mitochondrial structure and function and HPASMC proliferation. *American Journal of Respiratory Cell and Molecular Biology*. 2018; 58(5):648-657. PMID: 29182484. ***Co-First Authors.**
- **Kang BY***, Park KK, Kleinhenz JM, Murphy TC, Sutliff RL, Archer D., and Hart CM. PPARγ Regulates the ETS1/miR-27a Axis to Reduce ET-1 and Endothelial Dysfunction in the Sickle Cell Mouse Lung. *American Journal of Respiratory Cell and Molecular Biology*. 2017; 56(1):131-144, 2017. PMID: 27612006. *** Corresponding Author**
- Green DE, Murphy TC, **Kang BY**, Bedi B, Yuan Z, Sadikot RT, Hart CM. Peroxisome Proliferator-Activated Receptor Gamma Enhances Human Pulmonary Artery Smooth Muscle Cell Apoptosis Through MicroRNA-21 and Programmed Cell Death 4. *Am J Physiol Lung Cell Mol Physiol***.** 2017; 313(2): L371-L383. PMID: 28522568.
- Chaudhry A, Carthan KA, **Kang BY**, Calvert J, Sutliff RL, Michael Hart C. PPARγ attenuates hypoxia-induced hypertrophic transcriptional pathways in the heart. Pulm Circ. 2017 Mar 13;7(1):98-107. PMID: 28680569.
- Adesina SE, Wade BE, Bijli KM, **Kang BY**, Williams CR, Ma J, Go YM, Hart CM, Sutliff RL. Hypoxia inhibits expression and function of mitochondrial thioredoxin 2 to promote pulmonary hypertension. Am J Physiol Lung Cell Mol Physiol. 2017;312(5):L599-L608. PMID: 28130258.
- **Kang BY***, Park KK, Kleinhenz JM, Murphy TC, Green DE, Bijli KM, Bijli KM, Yeligar SM,

Carthan KA, Searles CD, Sutliff RL, and Hart CM. PPARγ activation reduces hypoxia-induced endothelin-1 expression through upregulation of miR-98. *American Journal of Respiratory Cell and Molecular Biology*. 54(1):136-46, 2016. PMCID: PMC4742924. *** Corresponding Author**

- Bijli KM, **Kang BY**, Sutliff RL, Hart CM. Proline-rich tyrosine kinase 2 downregulates peroxisome proliferator-activated receptor gamma to promote hypoxia-induced pulmonary artery smooth muscle cell proliferation. Pulm Circ. 2016;6(2):202-10. PMID: 27252847.
- Green DE, Murphy TC, **Kang BY**, Searles CD, and Hart CM. PPARγ ligands attenuate hypoxia-induced proliferation in human pulmonary artery smooth muscle cells through modulation of miR-21. *PLoS ONE* 2015; 10: e0133391. PMCID: PMC4514882.
- **Kang BY**, Park KK, Green DE, Bijli KM, Searles CD, Sutliff RL, and Hart CM. Hypoxia mediates mutual repression between microRNA-27a and PPARγ in the pulmonary vasculature. *PLoS ONE* 2013; 8(11):e79503. PMCID: PMC3828382.



Jordan A. Kempker, MD, MSc
Assistant Professor of Medicine

In 2015 I joined Emory faculty after completing my residency and fellowship training here. During my fellowship training I completed a Masters of Science and Clinical Research through Emory Rollins School of Public Health and my research interests are in intersections of health services research and data science in the topics of sepsis and acute respiratory distress syndrome. I have mentored three Emory School of Medicine Discovery students and worked with several fellows helping with their research projects.

Trainees who wish to work with me will be involved with managing and analyzing large healthcare databases and it is important to have some background in computer science, particularly in the SAS or R languages. Those seeking training in the MSCR program will achieve the sufficient background knowledge and skills for this. Even for trainees who do not work primarily with me, I am happy to serve in a limited role as a consultant to meet a few times and review your project"s study design, data management procedures, and overall goals for feasibly creating scientific output in fellowship. For those trainees with any interest at all in the MSCR, I"d also encourage you to set up a meeting with me to discuss the commitments, expectations, and other features of the program.

Current Mentees:
Katrina Abril – Completed a national analysis of hospital discharges with tracheostomy for MSCR thesis.
Mohleen Kang – Working on a secondary data analysis of data from RCTs in IPF for MSCR thesis. Published a book chapter on epidemiology of ARDS
Joshua Detelich – Starting a secondary data analysis of data from RCTs in ARDS for MSCR thesis. Completing manuscript on analysis home-to-hospital distance and sepsis outcomes.
Christin-Lauren Tanksley – Planning on applying for MSCR to examine disparities in critical care.

Publications with Mentees:

- Kempker JA, Abril MK, Chen Y, Kramer MR, Waller LA, Martin GS. The Epidemiology of Respiratory Failure in the United States 2002-2017: A Serial Cross-Sectional Study. Crit Care Explor. 2020 Jun;2(6):e0128. eCollection 2020 Jun. PMID: 32695994; PMCID: PMC7314331.

- Kang M, Kempker JA. Definitions, Epidemiology, Clinical Risk Factors, and Health Disparities in Acute Respiratory Distress Syndrome. Semin Respir Crit Care Med. 2019 Feb;40(1):3-11. doi: 10.1055/s-0039-1683884. Epub 2019 May 6. PMID: 31060083.

- Ike JD, Kempker JA (co-first author), Kramer MR, Martin GS. The Association Between Acute Respiratory Distress Syndrome Hospital Case Volume and Mortality in a U.S. Cohort, 2002-2011. Crit Care Med. 2018 May;46(5):764-773. PMID: 29394181; PMCID: PMC5914522.

- Rajaram P, Parekh A, Fisher M, Kempker J, Subramanian R. Comparison of Post-Liver Transplantation Outcomes in Portopulmonary Hypertension and Pulmonary Venous Hypertension: A Single-Center Experience. Transplant Proc. 2017

- Cochi SE & Kempker JA (co-first author), Annangi S, Kramer MR, Martin GS. Mortality Trends of Acute Respiratory Distress Syndrome in the United States from 1999-2013. Ann Am Thorac Soc. 2016 Oct;13(10):1742-1751. PMID: 27403914; PMCID: PMC5122485



Michael Koval, PhD
Professor of Medicine and Cell Biology
Associate Division Director for Research
Professor of Medicine and Cell Biology

I have a long-standing interest and expertise in studying the molecular basis for formation and remodeling of intercellular junctions and how that is impaired in lung disease. About 15 years ago I joined the Department of Medicine and Emory Alcohol and Lung Biology Center at Emory University. I also have a joint appointment in the Department of Cell Biology. A major research direction in my lab is to understand how tight junctions regulate the pulmonary air/liquid barrier and how this is impaired in Acute Respiratory Distress Syndrome (ARDS). A long term goal of our research is to identify control points which augment barrier function as a means to improve the outcome of patients with ARDS and other forms of lung injury, particularly in the context of alcoholic lung syndrome, HIV-associated lung disease and COVID-19.

Lab webpage: https://www.kovallab.org/

Current/Past Mentees:

Christian Overgaard, PhD - Effect of alcoholic lung syndrome on lung epithelial barrier function

W. Randy Hunt, MD – Pulmonary consequences of cystic fibrosis-related diabetes

Barbara Schlingmann, PhD – Peptide therapeutics to promote alveolar epithelial barrier function

Samuel A. Molina, PhD – Regulation of the airway glucose barrier in normal and CF lung

Prestina Smith, PhD – Cross-regulation of planar cell polarity and barrier function in alcoholic lung syndrome

Abstracts and publications with mentees:

Overgaard, C.E., B. Schlingmann, S. Dorsainvil White, C. Ward., X. Fan, S. Swarnakar, L. A. Brown, D. M. Guidot and M. Koval. 2015. The relative balance of GM-CSF and TGF?1 regulates lung epithelial barrier function. Amer. J. Physiol. Lung Cell. Mol. Biol., 308:L1212-1223. PMCID: PMC4499033.

Hunt, W. R., S. M. Zughaier, D. E. Guentert, M. A. Shenep, M. Koval, N. A. McCarty, and J. M. Hansen. 2014. Hyperglycemia impedes lung bacterial clearance in a murine model of cystic fibrosis-related diabetes. Amer. J. Physiol. Lung Cell. Mol. Biol., 306:L43-L49. PMCID: PMC3920212.

Molina, S.A., B. Stauffer, H. K. Moriarty, A. Kim, N. A. McCarty, and M. Koval. 2015. Junctional abnormalities in human airway epithelial cells expressing F508del CFTR. Amer. J. Physiol. Lung Cell. Mol. Biol., 309:L475-87. PMCID: PMC4556929.

Schlingmann, B., C. E. Overgaard, S. A. Molina, K. S. Lynn, L. A. Mitchell, S. Dorsainvil White, A. L. Mattheyses, D. M. Guidot, C. T. Capaldo, M. Koval. 2016. Regulation of claudin / zonula occludens-1 complexes by hetero-claudin interactions. Nature Comm. 7:12276 doi: 10.1038/ncomms12276. PMCID: PMC4962485

Smith, P., L. A. Jeffers, M. Koval. 2019. Effects of different routes of endotoxin injury on barrier function in alcoholic lung syndrome. Alcohol, 80:81-89. PMCID: PMC6613986.



Frances Eun-Hyung Lee, MD
Assistant Professor of Medicine
Director, Asthma, Allergy, Immunology Program

I came to Emory in 2012 as a Physician-Scientist in Pulmonary Immunology. With my unique expertise, my focus at Emory University was to build a three-pronged approach for excellence in (1) Translational Research, (2) Clinical
Service, and (3) commercialization of University technologies through small business opportunities.

In research, I have the expertise, leadership, and training in the biology of human blood antibody secreting cells (ASC) and BM plasma cells. As a translational scientist, I have focused my laboratory to study the human long-lived plasma cells (LLPC) in the bone marrow with the goal to understand novel intrinsic and extrinsic mechanisms of their survival. Our work identified the human LLPC phenotype using multi-color flow cytometry, morphology, and viral-specific Elispots from measles and mumps specific plasma cell responses in only one unique CD19-CD38hiCD138+ BM subset. Using a combination of next generation sequencing to follow VH clones in the plasma cell subsets combined with state-of-the art proteomics, we directly linked the of serum viral-antibodies to the one unique cellular compartment (LLPC) in the human BM. This work identifies the human LLPC compartment for the first time and provides the basis to identify novel mechanisms of plasma cell survival for the persistence of protective antibody secretion.

Within the past 3 years, I have also built the Adult Asthma Allergy and Immunology Program at Emory University with new clinical service line to provide state-of-the-art care for patients with severe asthma

and complex allergic and immunological diseases. This program works closely with established expertise at Emory in Pediatric Immunodeficiency, Otolaryngology in the Rhinology and Voice Clinics, Interventional Pulmonary, and Dermatology. The goals of this program are to provide novel immune therapies through clinical trials and compassionate use. In addition to providing excellence in clinical care, I have developed a translational research program to understand the basic immune cellular mechanisms of IgE mediated allergic diseases with support from both NIH and Pharmaceutical research grants.

Lastly, I have been working at the interface of academic and small business enterprises to further commercialize university-based technologies with support from the Emory Technology Transfer Office, Georgia Research Alliance (GRA) programs, Center for Disease Control (CDC) and Small Business Innovative Research grants. We have been developing novel immune-based diagnostic methods for infectious diseases and new pharmaceutical research reagents to enhance antibody secretion and survival of plasma cells for the biologics industry.

Most recent Publications:

- Rapid isolation and profiling of a diverse panel of human monoclonal antibodies targeting the SARS-CoV-2 spike protein.
  Nat Med
  07/10/2020 *Authors: Zost SJ; Gilchuk P; Chen RE; Case JB; Reidy JX; Trivette A; Nargi RS; Sutton RE; Suryadevara N; Chen EC*
- A Bioinformatic Approach to Utilize a Patient's Antibody-Secreting Cells against Staphylococcus aureus to Detect Challenging Musculoskeletal Infections.
  Immunohorizons Volume: 4 Page(s): 339 - 351
  06/22/2020 *Authors: Muthukrishnan G; Soin S; Beck CA; Grier A; Brodell JD; Lee CC; Ackert-Bicknell CL; Lee FE-H; Schwarz EM; Daiss JL*
- The impact of belatacept on third-party HLA alloantibodies in highly sensitized kidney transplant recipients.
  Volume: 20 Page(s): 573 - 581
  02/01/2020 *Authors: Parsons RF; Zahid A; Bumb S; Decker H; Sullivan HC; Eun-Hyung Lee F; Badell IR; Ford ML; Larsen CP; Pearson TC*
- Dupilumab treatment for allergic bronchopulmonary aspergillosis: A case series.
  J Allergy Clin Immunol Pract Volume: 8 Page(s): 742 - 743
  02/01/2020 *Authors: Ramonell RP; Lee FE-H; Swenson C; Kuruvilla M*
- Recent Advances in Lung Immunobiology.
  Am J Respir Cell Mol Biol Volume: 61 Page(s): 786 - 788
  12/01/2019 *Authors: Ramonell RP; Prasla Z; Terry CR; Schulman DA; Lee FE-H*



Greg Martin, MD, MSc
Professor of Medicine
Executive Associate Division Director, Division of Pulmonary, Allergy, Crtical Care and Sleep Medicine
Director of Research, Emory Critical Care Center

I completed my undergraduate studies at Duke University and my medical school, residency and subspecialty fellowship training at Vanderbilt University before joining the faculty at Emory in 2000. My interests are predominantly in critical care, although I maintain an active clinical practice in both pulmonary and critical care medicine. I completed a Master of Science in Clinical Research (MSCR) degree at Emory and have mentored many students, residents and fellows in my career. My research includes both clinical and translational research focusing on patients with sepsis and acute respiratory distress syndrome (ARDS), spanning a range from epidemiology and health services research through studies of pathogenesis and clinical biomarkers to randomized treatment trials.

I serve as the Director of Research for the Emory Center for Critical Care (ECCC), Director of the Emory/Georgia Tech Predictive Health Institute and the affiliated Center for Health Discovery and Well Being, and the Director of the multi-institutional NIH-supported Atlanta Center for Microsystems Engineered Point-of-Care Technologies (ACME POCT). I have held several leadership positions both at Emory and at medical societies and non-profit organizations. I am currently the Executive Associate Division Director for Pulmonary, Allergy Critical Care and Sleep Medicine and I will serve as the President of the Society of Critical Care Medicine in 2021.

Recent research projects with mentees

- Jordan Kempker, MD, MSc: "Vitamin D status and the risk for hospital-acquired infections in critically ill adults: a prospective cohort study." Published in *PLoS One* and available here: https://pubmed.ncbi.nlm.nih.gov/25849649
- Carmen Polito, MD, MSc: "Prehospital recognition of severe sepsis: development and validation of a novel emergency medical services screening tool." Published in *Am J Emerg Med* and available here: http://www.ncbi.nlm.nih.gov/pubmed/26070235
- Jordan Kempker, MD, MSc: "The effects of marijuana exposure on expiratory airflow. A study of adults who participated in the U.S. National Health and Nutrition Examination Study." Published in *Annals of the American Thoracic Society* and available here: http://www.ncbi.nlm.nih.gov/pubmed/25521349
- Sarah Prebil, MD: "Safety of research bronchoscopy in critically ill patients" published in *Journal of Critical Care* and available at: http://www.ncbi.nlm.nih.gov/pubmed/25092617
- Chris Seymour, MD, MSc: "Marital status and the epidemiology and outcomes of sepsis." Published in CHEST and available at: http://www.ncbi.nlm.nih.gov/pubmed/20173054
- Jessica Alvarez, PhD: "Vitamin D status is independently associated with plasma glutathione and cysteine thiol/disulfide redox status in adults." Published in *Clinical Endocrinology* and available at: https://pubmed.ncbi.nlm.nih.gov/24628365
- Jared Greenberg, MD: "Outcomes for critically ill patients with HIV and severe sepsis in the era of highly active antiretroviral therapy." Published in *Journal of Critical Care* and available at: http://www.ncbi.nlm.nih.gov/pubmed/22033058
- Caroline Tse, MD: "Characteristics and Outcomes of HIV-Infected Patients With Severe Sepsis: Continued Risk in the Post-Highly Active Antiretroviral Therapy Era." Published in *Critical Care Medicine* and available at: http://www.ncbi.nlm.nih.gov/pubmed/25853590
- Freny Nirappil, MD: "Characteristics and outcomes of HIV-1-infected patients with acute respiratory distress syndrome." Published in *Journal of Critical Care* and available at: http://www.ncbi.nlm.nih.gov/pubmed/25466320

- David Berkowitz, MD: “Alcohol Abuse Enhances Pulmonary Edema in Acute Respiratory Distress Syndrome.” Published in Alcohol Clin Exp Res and available at: https://pubmed.ncbi.nlm.nih.gov/19572988
- Carmen Polito, MD, MSc: “Navigating the institutional review board approval process in a multicenter observational critical care study.” Published in *Annals of the American Thoracic Society* and available here: https://pubmed.ncbi.nlm.nih.gov/24368345
- Jenny Han, MD: “Evaluating Simulation-Based ACLS Education on Patient Outcomes: A Randomized, Controlled Pilot Study.” Published in the *Journal of Graduate Medical Education* and available at: https://pubmed.ncbi.nlm.nih.gov/25210581/
- David Berkowitz, MD: “Accurate characterization of extravascular lung water in acute respiratory distress syndrome.” Published in *Critical Care Medicine* and available at: https://pubmed.ncbi.nlm.nih.gov/18496374/
- John David Ike, MD: “The Association Between Acute Respiratory Distress Syndrome Hospital Case Volume and Mortality in a U.S. Cohort, 2002-2011.” Published in *Critical Care Medicine* and available at: https://pubmed.ncbi.nlm.nih.gov/29394181
- Michael Lava, MD: “Typologies of Decision-Makers in the ICU: A Qualitative Study of Patients with Acute Respiratory Distress Syndrome and Sepsis and Their Surrogates.” Published in *Critical Care Explorations* and available at: https://pubmed.ncbi.nlm.nih.gov/32166257
- Shea Cochi, MD: “Mortality Trends of Acute Respiratory Distress Syndrome in the United States from 1999 to 2013.” Published in *Annals of the American Thoracic Society* and available at: https://pubmed.ncbi.nlm.nih.gov/27403914/

Recent reviews and book chapters with mentees:

- Kempker JA, Martin GS. A global accounting of sepsis. *Lancet* 2020; 395(10219): 168-170.
- Adelman MW, Woodworth MH, Langelier C, Busch LM, Kempker JA, Kraft CS, Martin GS. The gut microbiome’s role in the development, maintenance, and outcomes of sepsis. *Crit Care* 2020; 24: 278.
- Kempker JA, Wang HE, Martin GS. Sepsis is a preventable public health problem. *Crit Care* 2018;22(1):116.
- Ogbu OC, Martin GS, Murphy DJ. A Few mL’s of Prevention: Lung Protective Ventilation Decreases Pulmonary Complications. *Crit Care Med* 2015; 43(10):2263-4.
- Martin R, Esper AM, Martin GS. Hematologic Complications. In: Non-Pulmonary Complications of Critical Care. Richards JB and Stapleton RD (eds). New York, NY. Springer New York, 2014, pp 135-163.
- Soto GJ, Martin GS, Gong MN. Healthcare Disparities in Critical Illness. *Crit Care Med* 2013; 41(12): 2784-2793.

Recent abstracts with mentees:

- Kang M, Veeraraghavan S, Martin GS, Kempker J. 36 Item Short Form Survey Health Transition Question and Changes in Various Physiologic and Patient Related Outcome Measures in Patients with Idiopathic Pulmonary Fibrosis. *Am J Respir Crit Care Med* 2020; 201: A3382.
- Merchant A, Martin GS, Esper AM, Holder AL. The Independent Association of Mechanical Ventilation with Septic Shock Severity. *Am J Respir Crit Care Med* 2020; 201: A3507.
- Han J, Cribbs SK, Guidot DM, Tangpricha V, Martin GS, Brown LS. Ex Vivo Vitamin D Stimulation of Alveolar Macrophage Phagocytosis Index in People Living with HIV, Stratified by Smoking Status. *Am J Respir Crit Care Med* 2019;199:A5197.
- Kempker JA, Martin GS, Waller L, Kramer M. Hospital Performance on the Centers for Medicare and Medicaid’s Sepsis Care Quality Metric. *Crit Care Med* 2019;47(1):806.

- Polito C, Rajasekar S, Nabavi N, Mohsin A, Martin GS, Yancey A, Sevransky JE. A Quality Improvement Study to Increase Sepsis Recognition by EMS Providers Using the Prehospital Sepsis (PRESS) Screening Tool. *Am J Respir Crit Care Med* 2018; 197: A5998.

An updated bibliography is available through PubMed at http://bit.ly/gsmartin_NCBI



Ashish Mehta, MD, MSc
Assistant Professor of Medicine
Director, Atlanta VA Medical Center Medical Intensive Care Unit

I have been at Emory since 2003, when I started my intern year. I completed residency and fellowship in the Emory program and joined the faculty of the VA section in 2009 with a funded 2-year career development grant. I completed the Masters of Science in clinical research (MSCR) program in 2013 and received a 5-year career development award grant from the VA. My research involves clinical translational projects evaluating the role of alcohol abuse in predisposing individuals to pneumonia and acute lung injury. Specifically, I investigate the role of zinc deficiency and oxidative stress on alveolar macrophage immune function and am in the middle of a large 5 year randomized clinical trial evaluating the role of dietary antioxidants and zinc on lung immune function.

I have not previously worked with fellows, but would be available as a secondary mentor and for collaboration on projects that involve the role of alcoholism in lung disease. I have co-mentored medical students who work in the laboratory setting and I have a strong interest in clinical research. I am the medical director of the MICU at the VA and have a strong clinical interest in critical care ultrasound. I have experience with writing IRB protocols and would be available as a resource or mentor for any fellows who may have an idea for a research project.

Recent research project with mentee

Middour T, Fan X, and Mehta A. Treatment with s-adenosylmethionine and zinc restores Nrf2 and Nrf2-antioxidant response element dependent gene expression in alcohol-treated alveolar macrophages in vitro. Journal of Investigative Medicine. Vol 62(2), P. 542, 2014. Presented at South Society of Clinical investigation meeting, New Orleans, Louisiana, 2014 (oral presentation).

Recent book

- Guidot DM and Mehta AJ, editors. Alcohol Use Disorders and the Lung: A Clinical and Pathophysiological Approach, Humana Press, 2014. ISBN-10: 146148832X

Other recent manuscripts

- Mehta AJ, Yeligar SK, Elon L, Brown LA, Guidot DM. Alcoholism Causes Alveolar Macrophage Zinc Deficiency and Immune
- Dysfunction. Am J Respir Crit Care Med, Vol. 188, No. 6, pp. 716-23, 2013 PMID: 23805851, PMCID: PMC3826184
- Mehta AJ, Guidot DM, and Weber KT. Alcohol Abuse, the Alveolar Macrophage and Pneumonia. Am J Med Sci, 2012 Mar;343(3):244-7. PMCID: PMC3288531



David J. Murphy, MD, PhD
Assistant Professor of Medicine
Patient Safety Officer, Emory Healthcare
Director of Research, Emory Healthcare Office of Quality
Director of Quality, Emory Critical Care Center

I joined the Emory University faculty in 2011 where I enjoy pursuing my passion for improving healthcare quality and patient safety through a variety of clinical, administrative, and research activities. Prior to coming to Emory, I completed my undergraduate education at Johns Hopkins University; medical school at New Jersey Medical School, Internal Medicine residency at Robert Wood Johnson Medical School; and pulmonary critical care fellowship training at the Johns Hopkins University. While a fellow at Johns Hopkins, I also completed my doctor of philosophy in Clinical Investigation from the Bloomberg School of Public Health. My research focuses on advancing healthcare quality and patient safety by improving the translation of evidence into practice. I apply a range of clinical research and health services research methods to better evaluate healthcare delivery and outcomes, to assess barriers to best practices, and to improve healthcare delivery across organizations. Several of my clinical research areas include healthcare associated conditions, transfusion medicine, sepsis, and acute respiratory distress syndrome (ARDS).

Recent mentees (medical students/physicians):

- **Ananda Chowdhury, MD**: Mentored as resident in internal medicine; now a pulmonary fellow at Cleveland Clinic
- **Michael Evans, MD**: Mentored as medical student; now a resident in internal medicine at Emory
- **Husam Kheir, MD**: Mentored as research volunteer; now a medical student at NYU
- **Peter Lyu, MSPH**: Mentored as Rollins School of Public Health MSPH student; now a PhD candidate at Harvard University
- **Lacey Loomer, MSPH**: Mentored as Rollins School of Public Health MSPH student; now a PhD candidate at Brown University
- **Kevin Seitz MD, MSc**: Mentored as medical student and clinical investigation (MSc) student; now a resident in internal medicine at University of Washington
- **Ogbonna Ogbu, MBBS, MSc**: Mentored as fellow in pulmonary and critical care and clinical investigation (MSc) student; now physician and critical care quality leader at Piedmont Health
- **Michelle Ossmann, RN, MSN, PhD**: Mentored as doctoral student in Georgia Tech School of Architecture; now Director of Healthcare Environments at Steelcase Health
- **Casey Cable, MD:** Mentoring as a pulmonary and critical care fellow, and a Masters in Clinical Investigation student
- **Byron Crowe:** Mentoring as a medical student

Recent peer-reviewed publications with mentees (in italics):

Lyu PF, **Murphy DJ.** The Economics of Fluid therapy in Critically Ill Patients. [Review] *Current Opinion in Critical Care* 2014; 20(4): 402-407. PMID: 24979711

- **Murphy DJ**, *Ogbu OC*, Coopersmith CM. ICU Director Data: Using data to assess value, inform local change, and relate to the external world. [Review] *Chest* 2015; 147 (4): 1168-1178. PMID: 25846533
- *Ogbu OC*, **Murphy DJ**, Martin GS. How to Avoid Fluid Overload. [Review] *Current Opinion in Critical Care* 2015; 21(4): 315-21. PMID: 26103147
- *Ogbu OC*, Martin GS, **Murphy DJ**. A Few mL"s of Prevention: Lung Protective Ventilation Decreases Pulmonary Complications. [Invited Editorial] *Critical Care Medicine* 2015; 43(10):2263-4. PMID: 26376257

- **Murphy DJ,***Lyu PF*, Gregg SR, Martin GS, Hockenberry JM, Coopersmith CM, Sterling M, Buchman TG, Sevransky J. Using incentives to improve resource utilization: a Quasi-experimental evaluation of an ICU quality improvement program. *Critical Care Medicine* 2016; 44(1):162-170. PMID: 26496444.
- *Lyu PF*, Hockenberry JM, Gaydos LM, Howard DH, Buchman TG, **Murphy DJ**. Impact of a Sequential Intervention on Albumin
  Utilization in Critical Care: a Quasi-experimental Study. *Critical Care Medicine* 2016; 44(7): 1307-1313. PMID: 26963324
- *Seitz K*, Sevransky JE, Martin GS, Roback JD, **Murphy DJ**. Restrictive Transfusion Protocols in Critical Care: Do They Affect Transfusion Practice? *Critical Care Medicine* 2016; (In Press). PMID: 27632673
- *Polito CC*, Bloom I, Yancey AH, Lairet JR, Isakov AP, Martin GS, Patel A, Rajasekar S, Pratt D, Wolfosky K, Hanfelt J, **Murphy DJ**,
  Sevransky JE. Pre-hospital sepsis care: understanding provider knowledge, behaviors, and attitudes. 2016 (In Press)

Recent posters and presentations with mentees (in italics)

Ahmed H, Husain A, Martin GS, Sevransky J, **Murphy, DJ**. Process of care elements associated with the failure to provide lung protective ventilation for patients with ARDS. *Chest* 2013: 375A.

- *Ogbu OC*, Martin GS, Sevransky JE, **Murphy DJ**. High tidal volumes are independently associated with development of a ventilator associated condition in the ICU (Abstract) American Thoracic Society 2015: A3117.
- *Lyu PF*, **Murphy DJ**, Hockenberry J, Gaydos L, Howard D. Impact of financial incentives and guideline discussions on decreasing albumin use in critical care. (Poster) Georgia Public Health Association 2014.
- *Seitz K*, Sevransky J, Roback JD, **Murphy, DJ**. Restrictive Transfusion Protocols in Critical Care: Structural ICU Factors and Inappropriate Transfusions (Abstract) American Academy of Blood Banks 2015. Transfusion 2015: 55 (S3): SP296.
- *Seitz K*, Sevransky J, Martin GS, Roback JD, **Murphy, DJ**. Restrictive Transfusion Protocols in Critical Care: Can Structural ICU Factors Affect Transfusion Practice? (Abstract) Society of Critical Care Medicine 2016. Critical Care Medicine 2015; 43 (12 Supplement 1): 194.
- Lahsaei P, *Loomer L*, Groff R, O"Reilly-Shah VN, **Murphy DJ**, Blum JM. Peri-operative surgery adherence to the 3-hour sepsis
  bundle. (Abstract) Anesthesiology 2016.
- *Polito CC*, Bloom I, Yancey A, Lairet J, **Murphy DJ**, Martin GS, Sevransky JE. Improving prehospital recognition of severe sepsis (PRESS): knowledge and attitudes of first responder. (Abstract) International American Thoracic Society Conference 2016: A7617.
- *Holder AL*, **Murphy DJ**, Overton EC, *Lyu P*, Martin GS, Buchman TG. Organ failure data over time in the critically ill: At what cost,
  and to what benefit? (Abstract) Society of Critical Care Medicine 201
- *:*



Ramzy H. Rimawi, MD
Assistant Professor of Medicine
Senior Physician

After training in Infectious Diseases and Critical Care Medicine, I joined the faculty at Emory in 2014 as a clinical educator. My research career has largely focused on ICU-related infections, antibiotic stewardship, and infection control. I am passionate about teaching fellows who rotate through the electronic and surgical ICUs. I would be delighted to meet any trainees interested in these areas.

Focus and interests:

ICU-related Infectious Diseases: Coronavirus (COVID-19), Influenza, Sepsis

Antibiotic Stewardship: Optimizing antibiotic use in the ICU

Recent Publications:

Rimawi RH. Using The Surviving Sepsis Coronavirus COVID-19 Guidelines – Anything New Yet? Critical Care Explorations. 2020. *Pending publication*

Rimawi RH, Kalaji W. Improving Evidence-Based Medical Care in Developing Countries. Critical Care Med. 2018 Aug;46(8):1380-1381.

Rimawi RH. Can A Lack of ESBL-Producing Enterobacteriaceae Rectal Carriage Help Avoid Carbapenem Prescription? Critical Care Med. 2016 Apr; 44(4): 848-9.

Rimawi RH. Just Say "Stop" - Avoiding Prolonged Empiric Antibiotics. Critical Care Med. 2015. Dec; 43(12): 2675-2676.

Rimawi RH, Ashraf M, Kabchi B, et al. The impact of penicillin skin testing on clinical practice and antimicrobial stewardship. *Journal of Hospital Medicine*. 2013. Jun; 8(6): 341-345.

Rimawi RH, Mazer MA, Siraj D, Gooch M, Cook PP. The impact of regular collaboration between Infectious Diseases and Critical Care practitioners on antimicrobial utilization and patient outcome. *Critical Care Medicine*. 2013. Sep; 41(9): 2099-107.

Rimawi RH, Shah KB, Cook PP. Risk of re-documenting penicillin allergy in a cohort of patients with negative penicillin skin tests. *Journal of Hospital Medicine*. 2013 Nov; 8(11): 615-618.

Rimawi RH. A case of anaphylaxis after a penicillin tolerance. *Journal of Hospital Medicine*. 2014 Jan; 9(1): 71

Rimawi RH, Mazer MA. Expanding the pool of healthcare providers to perform penicillin skin testing in an ICU. *Intensive Care Medicine*. 2014 Mar; 40(3): 462-463.

Rimawi RH, Cook PP, Mazer MA. A weapon to resistance – A call for direct collaboration. *Critical Care Medicine*. 2014. Apr; 42(4): e310.

Rimawi RH, Shah KB, Ramsey KM, Cook PP. Correlation between methicillin-resistant Staphylococcus aureus nasal sampling and Staphylococcus aureus pneumonia in the medical intensive care unit. *Infection Control and Hospital Epidemiology*. 2014 May; 35(5): 590-593.



Ruxana T Sadikot, MD, MRCP (UK)
Professor of Medicine, Emory University
Section chief, Pulmonary and Critical Care, Atlanta VAMC

My laboratory focuses on host pathogen interaction with an intent to develop immunomodulatory therapies for resistant infections such as *P. aeruginosa and Non-Tuberculous Mycobacteria*. We study several aspects of host response and use cell culture and mouse models of infection. Our projects span from basic to translational using human cells. My lab is funded by Department of Veterans Affairs, NIH and CF Foundation.

Current Projects:
TREM-1 in HIV related lung injury and immune response: We use a variety of macrophages including cell lines, bone marrow derived macrophages, alveolar macrophages and HIV transgenic mice for the studies. In addition, we study the crosstalk between epithelial cells and macrophages through extracellular vesicles.
PPAR gamma agonism in lung immune response: The goal of this proposal is to define novel molecular approaches to stimulate immune response to virulent pathogens e.g. P. aeruginosa. This project seeks to define the role of PPARgamma agonism in P. aeruginosa biofilm formation through induction of a mitochondrial protein Paroxanase 2(PON2)
PGC1 alpha and mitochondrial Biogenesis in *P. aeruginosa* infection: This project seeks to define how P. aeruginosa disrupts mitochondrial biogenesis and disrupts epithelial integrity and immune response.
Mitochondrial Dysfunction in NTM infections: This project seeks to understand how NTM disrupts macrophage function through mitochondrial dysfunction.
Procalcitonin in lower respiratory tract infections: This is a clinical study in collaboration with ID. The study seeks to investigate if procalcitonin levels can guide use of antibiotics in patients with LRTI to prevent excessive use of antibiotics.



David Schulman, MD, MPH
Professor of Medicine
Associate Division Director for Education
Director, Pulmonary and Critical Care Medicine Fellowship

I came to Emory in 2001 as a clinician educator. Since then, I have served as medical director of the Emory Sleep Laboratory; my current clinical focus is on the diagnosis and management of sleep disorders as part of the Emory Sleep Center. From the beginning of my Emory career, I have taken an active role in the training of pulmonary and critical care medicine fellows, and served as Program Director from 2006 through 2020. In addition to my work with post-graduate trainees, I direct the Foundations Phase (i.e., the first eighteen months of medical education) for the Emory School of Medicine. Extramurally, my work in education has been recognized with a Fellows Education Award from the American Thoracic Society, the Parker J. Palmer Courage to Teach Award from the Accreditation Council for Graduate Medical Education, the Master Educator Award from the Association of Pulmonary and Critical Care Medicine Program Directors, and the Master Educator Award from the American College of Chest Physicians. I have help a number of leadership roles in the American College of Chest Physicians, and currently serve as their President-Designate.

My area of scholarly interest is in identifying and validating optimal methods of teaching and assessment, as is evidenced by my recent mentorship of fellows, residents and students, as documented below. Trainees who wish to work with me should have an interest in proposing, creating, implementing and measuring the effectiveness of novel techniques in education. While the ideal domain for this education would be in pulmonary medicine or evidence-based medicine, I am willing to help negotiate with School of Medicine leadership if your passion lies in another area.

Recent projects with mentees

- Nikita Desai, MD: "Gender Differences in Residency Evaluations."
- Nikita Desai, MD: "Assessing Medical Students' Clinical Reasoning Using Oral Examinations." Presented at CHEST 2017, Toronto, Canada.

- Bashar Staitieh, MD, and Ramin Saghafi, MD: “A Hypothesis-Driven Physical Diagnosis Curriculum for Pulmonary Fellows Improves Performance of Medical Students.” Accepted for publication in the Annals of the American Thoracic Society.
- Saumya Gurbani (MD, PhD student): “Retrospective Analysis of Time-of-Day vs. Student Performance on Medical School Exams.”

Recent abstracts and manuscripts

- "Recommended Reading from the Emory University Pulmonary and Critical Care Medicine Research Fellows: Recent Advances in Lung Immunobiology." Richard P. Ramonell, Zohra Prasla, Charles R. Terry, David A. Schulman, and Frances Eun-Hyung Lee. American Journal of Respiratory Cell and Molecular Biology, 2019.

- "A Sleep Medicine Curriculum for Pulmonary and Pulmonary/Critical Care Fellowship Programs: A Multisociety Expert Panel Report." Schulman DA, Piquette CA, Alikhan MM, et al. Chest. 2019 Mar;155(3):554-564.

- "Measuring Fellows' Willingness to Challenge Authority Using an Objective Structured Clinical Examination." Schulman DA, Holder A, Fugate K, Timmer M, Wright W, Esper A. Chest. 2017 152(4): A563.

- "Growth in Social Media and Live-Tweeting at Major Critical Care Conferences: Twitter Analysis of the Past Four Years." Khan R, Kashyap R, Bhar A, Schulman D, Bruno K, Carroll C. Chest. 2017 152(4): A547.



Jon Sevransky
Professor of Medicine
Director, EUH MICU,
Director, Critical Care, EUH.

My clinical, administrative and research interests center around the treatment of patients with life threatening illness. In addition to my administrative roles at Emory, I serve as the associate editor for the journal Critical Care Medicine, the chair of SCCM Discovery Research. I have additionally been a member of all 5 Surviving Sepsis Guidelines Committee
My primary research interests are in the treatment of patients with sepsis and the complications of sepsis including sepsis induced Acute Respiratory Distress Syndrome and septic shock. I am the overall PI of the VICTAS clinical trial, and the Clinical Coordinating Center PI of the SARI-PREP study. Most of the work that I am my collaborators do involve multiple sites and disciplines (emergency medicine, critical care etc.). The current SWEAT ICU study forms the centerpiece of Ankita Agarwal's' MSCR proposal, examining the association of clinician workload and clinician and patient outcomes . Previous work with mentees includes identifying sepsis patients in the prehospital phase (with Carmen Polito) , identification of phenotypes of decision making in patients and families of patients with sepsis and ARDS (with Mike Lava) and the association of physiologic assessment with amount of fluid infused and patient outcomes in shock (with Tina Chen, Montefiore – co- mentored with Michelle Gong) .

Bibliography

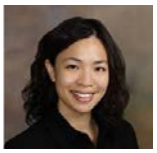
Lava MS, Dickert, N Frew, P Martin GS, **Sevransky JE** ;Typologies of Decision-Makers in the ICU: Critical Care Explorations 2019;1(5):e0011. doi: 10.1097/CCE.0000000000000011

Chen, JT Roberts, R, Fazzari, MJ, Kashani, K, Qadir, N, . Cairns, CB, Mathews, K, Park, P, Khan, A, Gilmore, JF, Tanner Brown, AR, Tsuei, B, Handzel, M, Chang, AL, Duggal, A, Lanspa, M, Herbert, JT, Martinez, A, Tonna,J, Ammar, MA, Hammond, D Nazer, LH Heavner, M Pender, E Chambers, L Kenes, MT, Kaufman, D Downey, A Brown, B Chaykosky, D Wolff, A Smith, M Katie Nault, K **Sevransky, JE**. Gong, MN Variation in fluid and vasopressor use in shock with and without physiologic assessment: A multi-center observational study, Critical Care Medicine, in press

Seethala RR, Hou PC, Aisiku IP, Frendl G, Park PK, Mikkelsen ME, Chang SY, Gajic O, **Sevransky JE.** Early risk factors and the role of fluid administration in developing acute respiratory distress syndrome in septic patients. Ann Intensive Care. 2017 Dec (1):11

Polito CC, Isakov A, Yancey A, Wilson DK, Anderson BA, Bloom I, Donnelly C Martin GS, **Sevransky JE**: Prehospital Identification of patients with severe sepsis: development and validation of a novel screening tool Am J Emergency Med 2015: 33: 1119-1125

Sevransky JE, Checkley W, Herrera P, Pickering BW, Barr J, Brown SM, Chang SY, Chong D, Kaufman D, Fremont RD, Girard TD, Hoag J, Johnson SB, Kerlin MP, Liebler J, O'Brien J, O'Keefe T, Park PK, Pastores SM, Patil N, Pietropaoli AP, Putman M, Rice TW, Rotello L, SIner J, Sajid S, Murphy DJ, Martin GS: Protocols and Hospital Mortality in Critically ill Patients: The United States Critical Illness and Injury Trials Group Critical Illness Outcomes Study Critical Care Medicine 2015; 43:2076-2084.



Viranuj Sueblinvong, MD
Assistant Professor of Medicine
Associate Director, Emory Adult Cystic Fibrosis Program

I came to Emory in late of 2008 to establish basic science research program. My current research focus is on understanding the mechanism by which alcohol and/or aging predispose the lung toward fibroproliferative repair following acute lung injury in mice. My clinical focus is on caring for adults with Cystic Fibrosis. We have multi-
disciplinary approach to improving care for these patients both in and out of the hospital.

Recent research publication with mentees:

- Viranuj Sueblinvong, V. Eric Kerchberger (MD student), Ramin Saghafi (Medical Resident, Pulmonary Fellow), Stephen T. Mills, Xian Fan, David M. Guidot. Chronic alcohol ingestion primes the lung for bleomycin-induced fibrosis in mice. Alcoholism: Clinical and Experimental Research. 2014 Feb;38(2):312-5. PMID 24033682.

- Sueblinvong V, Neveu WA (Pulmonary Fellow), Neujahr DC, Mills ST, Rojas M, Roman J, Guidot DM. Aging promotes pro-fibrotic matrix production and increases fibrocyte recruitment during acute lung injury. Adv Biosci Biotechnol. 2014 Jan;5(1):19-30. PMID 24596659.
- Viranuj Sueblinvong, Victor Tseng (Medical Resident, now a Pulmonary Fellow), Ramin Saghafi (Medical Resident, Pulmonary
  Fellow), Stephen T. Mills, David C. Neujahr, and David M. Guidot. TGFb1 mediates alcohol-induced Nrf2 suppression in lung fibroblasts. Alcoholism: Clinical and Experimental Research. 2014 Nov;38(11):2731-42. PMID 25421510.
- Wendy Neveu (Pulmonary Fellow), Stephen T. Mills, Bashar Staitieh, Viranuj Sueblinvong. TGFß1 epigenetically modifies Thy-1
  expression in primary lung fibroblasts. American Journal of Physiology " Cell 2015 (In press).

Abstracts presented at national and international meetings with mentees:

- V. Eric Kerchberger, Xian Fan, Ramin Saghafi, Steven T. Mills, David M. Guidot, Viranuj Sueblinvong. Chronic alcohol ingestion enhances lung fibrosis following bleomycin-induced lung injury in mice. Presented at 2012 Southern Society for Clinical Investigation Regional Meeting. Feb 2012. New Orleans, LA.
- Ramin Saghafi, Xian Fan, Viranuj Sueblinvong, David Guidot. Treatment with Sulforaphane, an activator of Nrf2, prevents
  alcohol-induced transforming growth factor-ß1 expression in mouse fibroblasts. Presented at 2012 Southern Society for Clinical Investigation Regional Meeting. Feb 2012. New Orleans, LA.
- Viranuj Sueblinvong, Ramin Saghafi, V. Eric Kerchberger, Steven T. Mills, Xian Fan, David M. Guidot. Alcohol induces TGFß1 expression via suppression of Nrf2 in vitro. Presented at 2012 ATS/ALA meeting, San Francisco, CA. May 2012. American Journal of Respiratory and Critical Care Medicine;185:A1266.
- V Sueblinvong, R Saghafi, ST Mills, X Fan, DM Guidot. Alcohol induces lung fibroblast oxidative stress via TGFß1 activation and Nrf2 suppression in vitro. Presented at 2013 SSCI meeting, New Orleans, LA. Feb 2013.
- Bashar Staitieh, Ramin Saghafi, Stephen T Mills, Xian Fan, David M Guidot, Viranuj Sueblinvong. Alcohol-induced oxidative stress

in lung fibroblasts appears to involve an imbalance between Nrf2 and thioredoxin-1 in the nuclear compartment. Presented at 2013 ATS/ALA meeting, Philadelphia, PA. May 2013.

- WA Neveu, ST Mills, V Sueblinvong. Transforming growth factor beta 1-induced epigenetic modification of Thy-1 in primary lung fibroblasts. Presented at 2014 Annual Meeting of the Southern Society for Clinical Investigation, New Orleans, LA. Feb 2014.
- WA Neveu, ST Mills, V Sueblinvong. Transforming growth factor beta 1-induced epigenetic modification of Thy-1 in primary lung fibroblasts. Presented at 2014 ATS/ALA meeting, San Diego, CA. May 2014.
- Viranuj Sueblinvong, Stephen T. Mills, David M. Guidot. Nuclear over-expression of thioredoxin-1 protects against alcohol- induced lung fibroblasts-myofibroblast transdifferentiation. Alcohol 2014;48:727-734 (abstract 25).
- Victor Tseng, S. Todd Mills, David M. Guidot, Viranuj Sueblinvong. ATF3 expression correlates with chronic but not acute alcohol-mediated suppression of Nrf2-ARE activity by TGFß1. Presented at 2014 ATS/ALA meeting, San Diego, CA. May 2014.
- Neveu W, Mills S, Staitieh B, Sueblinvong V. TGFß1 regulates myofibroblast transdifferentiation in the lung by Thy-1 methylation. Presented at 2015 Annual Meeting of the Southern Society for Clinical Investigation, New Orleans, LA. Feb 2015.
- Neveu W, Mills S, Staitieh B, Sueblinvong V. TGFß1 regulates myofibroblast transdifferentiation in the lung by Thy-1 methylation. Presented at 2015 ATS/ALA meeting, Denver, CO. May 2015.



Roy L. Sutliff, PhD
Associate Professor of Medicine
Faculty Associate for International Programs, Laney Graduate School

I came to Pulmonary Division at Emory in 2005 as an Assistant Professor. Since arriving at the Pulmonary Division, I have been consistently funded by the NIH and other Research Foundations. I am very active in the Molecular and Systems Pharmacology Program that is part of the Graduate Division of Biological and Biomedical Sciences and serve
on the Executive Board. In addition to my research, I oversee the International Programs of the Laney Graduate School and am active in international recruiting and developing international exchanges.
My area of research interest is in cardiovascular pathophysiology. Vascular reactivity is a major determinant of physiological parameters such as blood pressure. Constriction of the vessel results in an increased blood pressure whereas, dilation of the vessel decreases blood pressure. Endothelial cells line the blood vessel and can regulate diameter of blood vessels by releasing agents that constrict or relax vascular smooth muscle cells. Research in my laboratory focuses on examining the interaction between endothelial cells and vascular smooth muscle cells and how certain pathophysiological conditions impair vascular function. The four areas that are most heavily studied are 1) the mechanisms of pulmonary vascular disease and accelerated atherosclerosis in HIV infection; 2) the role of PPARg and its subsequent effects on NADPH oxidases in regulating endothelial function in pulmonary hypertension 3) the mechanisms underlying blood storage disease (in collaboration with Dr. John Roback, Pathology) and 4) the development novel rho kinase inhibitors for the treatment of pulmonary hypertension (a collaboration with Anacor Pharmaceuticals). Models include wild type and knockout or transgenic rodent models. Models may be challenged with a high fat diet to study diabetes or exposed to chronic hypoxia as a stimulus for the development of pulmonary

hypertension. Approaches include everything from whole animal physiology to understand the effects of these models on blood pressure or pulmonary hypertension, to isolated tissue studies examining vascular contractility, to cellular preparations to examine biochemistry.

Recent research projects with mentees:

Porter KM, Walp ER, Elms SC, Raynor R, Mitchell PO, Guidot DM, Sutliff RL. (2013). Human immunodeficiency virus-1 transgene expression increases pulmonary vascular resistance and exacerbates hypoxia-induced pulmonary hypertension development Pulmonary Circulation; 2013; 3(1):58-67, PMCID: 3641741.

- Alexander JT, El-Ali AM, Newman JL, Karatela S, Predmore BL, Lefer DJ, Sutliff RL, Roback JD. Red blood cells stored for increasing periods produce progressive impairments in nitric oxide-mediated vasodilation. 2013; Transfusion; 53(11):2619- 28. PMCID: 4140194.
- Kang BY, Park KK, Kleinhenz JM, Murphy TC, Green DE, Bijli KM, Yeligar SM, Carthan KA, Searles CD, Sutliff RL, Hart CM. PPARgamma Activation Reduces Hypoxia-induced Endothelin-1 Expression through Upregulation of miR-98. Am J Respir Cell Mol Biol. 2015.
- Adesina SE, Kang BY, Bijli KM, Ma J, Cheng J, Murphy T, Michael Hart C, Sutliff RL. Targeting mitochondrial reactive oxygen species to modulate hypoxia-induced pulmonary hypertension. Free Radic Biol Med. 2015.

Other recent manuscripts:

- Green DE, Murphy TC, Kang BY, Kleinhenz JM, Szyndralewiez C, Page P, Sutliff RL, Hart CM. The Nox4 inhibitor GKT137831 attenuates hypoxia-induced pulmonary vascular cell proliferation. Am J Respir Cell Mol Biol. 2012; 47(5):718-26. PMCID: 3547100.
- Sutliff RL, Hilenski LL, Amanso AM, Parastatidis I, Dikalova AE, Hansen L, Datla SR, Long JS, El-Ali AM, Joseph G, Gleason RL, Jr., Taylor WR, Hart CM, Griendling KK, Lassegue B. Polymerase Delta Interacting Protein 2 Sustains Vascular Structure and Function. Arterioscler Thromb Vasc Biol; 2013; 33(9):2154-61. PMCID: 3837414.
- Bijli KM, Kleinhenz JM, Murphy TC, Kang BY, Adesina SE, Sutliff RL, Hart CM. Peroxisome proliferator-activated receptor gamma
  depletion stimulates Nox4 expression and human pulmonary artery smooth muscle cell proliferation. Free Radic Biol Med. 2015;80:111-20



Aaron W. Trammell, MD, MSc
Assistant Professor of Medicine

I completed post-graduate training at Vanderbilt University and received additional clinical training in pulmonary vascular disease in Houston before joining the faculty at Emory in 2015. My outpatient clinic at The Emory Clinic focuses on pulmonary hypertension. My research aims to improve the clinical care of patients with common forms of pulmonary hypertension by investigating mechanisms known from pre-clinical models in epidemiologic and translational studies.

Current Mentees:

Fadi Rabih (co-mentor; lead mentor Micah Fisher): 1) Heart rate response to exercise in patients with CTEPH before/after surgical or medical management. 2) Impact of PH on outcome in patients who undergo renal transplantation.

Past Mentees:

Rhiannon Holden (co-mentor; lead mentor Micah Fisher): Impact of PH on outcome in patients who undergo renal transplantation.

Priyanka Rajaram (co-mentor; lead mentor Micah Fisher): 1) PH risk stratification using transthoracic echocardiography indicators of right heart function. 2) Differences in clinical management of portopulmonary hypertension among liver transplant centers in the U.S.

Abstracts and publications (mentees in bold):

Holden R, Vasanth P, Trammell A, Fisher MR. “The Effect of Pulmonary Hypertension with Left-Sided Heart Disease on Outcomes in Renal Transplant Patients.” (poster presentation), ATS 2019 International Conference, Dallas, TX; 05/20/2019.

Rajaram P, White BL, Pernetz MA, Trammell AW, Fisher MR. “Right Ventricular Longitudinal Peak Strain as a Predictor of Clinical Decompensation: A Single-Center Prospective Study.” (poster presentation), ATS 2018 International Conference, San Diego, CA; 05/20/2018.

Rajaram P, Trammell A, Subramanian R, Fisher MR. “A Survey Of Treatment And Listing Patterns Of Patients With Pulmonary Hypertension For Liver Transplantation.” (poster presentation), ATS 2017 International Conference, Washington, DC; 05/23/2017.

Rajaram P, Trammell A, Subramanian R, Fisher MR. “Screening For Pulmonary Hypertension In Liver Transplant Candidates: A Survey Of Practice Patterns In The United States.” (poster presentation), ATS 2017 International Conference, Washington, DC; 05/23/2017.

Trammell AW, Shah AJ, Phillips LS, Hart CM. Mortality in U.S. veterans with pulmonary hypertension: a retrospective analysis of survival by subtype and baseline factors. *Pulmonary Circulation*. 2019;9(1):1-12.

Trammell AW, Hemnes AR, Tseng V, Shah AJ, Phillips LS, Hart CM. Influence of Body Weight and Diabetes Mellitus in Patients With Pulmonary Hypertension. *American Journal of Cardiology*. (Revision in review, July 2020)



Cherry Wongtrakool, MD
Assistant Professor of Medicine
Associate Program Director, Pulmonary and Critical Care Medicine Fellowship Staff Physician, Atlanta VA Medical Center

My research interests span the intersection between tobacco/nicotine use and lung physiology and disease. I studied lung development using animal and cell culture models prior to arriving at Emory, particularly the importance of retinoic acid signaling in the differentiation and maturation of lung cells. Upon arriving at Emory, I began studying how prenatal nicotine exposure affects lung development since maternal smoking is a significant risk factor for the development of asthma. My publications demonstrate that prenatal nicotine exposure increases branching morphogenesis, the developmental program responsible for forming the conducting airways in the fetal lung. This disruption in normal development leads to an increased number of small airways, increased airway remodeling and increased airway hyperresponsiveness. These findings may partly explain why offspring of maternal smokers are more likely to develop asthma. In 2009, I moved my research program to the VA and began studying how chronic nicotine exposure increases airway hyperresponsiveness using animal and human cell culture models from asthmatic patients. Currently, my research focuses on the mechanisms through which chronic nicotine exposure stimulates nerve growth factor, a neurotrophin, to promote airway hyperresponsiveness and whether asthmatics have an accentuated response to nicotine exposure. I have also been involved in clinical studies. I was a site principal investigator for the Examinations of HIV Associated Lung Emphysema study led by Kristina Crothers at University of Washington. Although the study is no longer enrolling patients, the study is still open for data analysis. I am also a co-principal investigator for industry sponsored studies at the VA. The most recent study is whether benralizumab, a monoclonal antibody directed against the IL-5 receptor, will reduce exacerbations in patients with moderate to severe COPD.

I also serve as the Associate Program Director for the Pulmonary/Critical Care Medicine fellowship. As such, I am very interested in fostering trainee scholarship. I currently am the Medical Director of the Pulmonary Function Laboratory and have a clinical interest in lung physiology and cardiopulmonary physiology with exercise and would be very willing to discuss clinical projects related to either of these. Outside of Emory, I am also involved in the American Federation for Medical Research as the Southern Section Chair this year planning the 2016 Southern Regional Meeting in New Orleans. I have also been involved in the American Thoracic Society as a Planning Committee Member and a Program Committee Member for RCMB.

Recent research projects with mentees:

- Carolyn McCabe (Emory undergraduate student, currently in graduate school at University of Michigan): “Chronic Nicotine Exposure Decreases LC3 Associated Phagocytosis”
- Sierra Gross, MD (postgraduate, currently in Family Medicine residency in Nevada)
- Haixia Qin MD/PhD(Morehouse Internal Medicine Resident, currently in practice in California): "Into Thin Air-Air Embolism after CT Guided Transthoracic Needle Biopsy"-ACP National Poster Finalist
- Selected publications:
- Wongtrakool C, Roman J. Tobacco smoke exposure, nicotine and the embryologic origins of asthma. Current Respiratory Medicine Reviews. 2009 May; 5(2): 96-104.
- Ramirez A, Wongtrakool C, Welch T, Steinmeyer A, Zugel U, Roman J. Vitamin D inhibition of pro-fibrotic effects of transforming growth factor b in lung fibroblasts and epithelial cells. J of

Steroid Biochem Mol Biol. 2010 Feb 15;118(3):142-150. PMCID: 2821704
- Wongtrakool C, Wang N, Grooms K, Roser-Page S, Rivera HN, Hyde DM, Roman J, Spindel ER. Prenatal nicotine exposure impairs offspring pulmonary function through altered geometry mediated by “7 nicotinic acetylcholine receptors. Am J Resp Cell Mol Biol, 2012 May;46(5):695-702.
- Wongtrakool C, Grooms K, Ping XD, Brown LA, Roman J, Gauthier TG. In utero nicotine exposure promotes alternative activation of alveolar macrophages. Pediatric Research, 2012 Aug;72(2):147-53.
- Crothers K, McGinnis K, Kleerup E, Wongtrakool C, SooHoo G, Kim J, Sharafkhaneh A, Huang L, Luo Z, Thompson B, Diaz P, Kirk GD, Rom W, Detels R, Kingsley L, Morris A. HIV Infection is associated with reduced pulmonary diffusing capacity. J AIDS, 2013 Nov 1;64(3):271-8.
- Wongtrakool C, Grooms K, Bijli K, Crothers K, Fitzpatrick AM, Hart CM. Nicotine stimulates nerve growth factor in lung fibroblasts through an NF”B dependent mechanism. PLoS One, 2014 Oct 9(10): e109602.
- Attia E, Akgun KM, Wongtrakool C, Goetz MB, Rodriguez-Barrada MC, Rimland D, Brown ST, Soo Hoo GW, Kim J, Lee PJ, Schnapp LM, Sharafkhaneh A; Justice A, Crothers K. Increased risk of radiographic emphysema in HIV is associated with elevated soluble CD14 and nadir CD4. CHEST, 2014 Dec 1;146(6):1543-53.



Samantha Yeligar, PhD
Assistant Professor of Medicine

I am a basic and translational scientist, and I serve as a research and career development mentor for pulmonary and critical care fellows as well as postdoctoral and graduate trainees. My primary areas of research include elucidating the molecular mechanisms by which derangements in lung host immune defense occurs. My laboratory also focuses on examining potential therapeutic strategies to mitigate lung injury and immune dysfunction in multiple pathological conditions.

Current Mentees & Projects

I currently serve as a mentor for Dr. Niya Morris, MS, PhD, who is conducting postdoctoral research on the role of hypoxia-inducible factor-1 alpha in alcohol-induced alveolar macrophage dysfunction. I also mentor Kathryn Crotty, a graduate student in the Molecular and Systems Pharmacology program,who is investigating the mechanisms responsible for metabolic defects that are characteristic of impaired alveolar macrophage phagocytosis during chronic alcohol misuse and smooth muscle cell dysregulation in pulmonary hypertension. Further, I serve as a career development mentor for Dr. Ankita Agarwal, MD.

Past Mentees

My laboratory has active collaborations with Drs. Bashar Staitieh, MD and Sara Auld, MD, MSc to study alveolar macrophage mitochondrial derangements in people living with HIV and tuberculosis. We also have collaborative projects with Dr. Sushma Cribbs, MD, MSc to explore mechanisms of alveolar macrophage dysfunction in people living with HIV and Dr. Ashish Mehta, MD, MSc to

examine treatments that may mitigate alveolar macrophage dysfunction in people with a history of alcohol use disorders. These collaborations have resulted in presentations at numerous scientific conferences and publications in scientific journals.

A list of 5 publications (max) - ideally, these would include ones done with current or past PCCM fellows mentees.

Sadikot RT, Bedi B, Li J, Yeligar SM. Alcohol-induced mitochondrial DNA damage promotes injurious crosstalk between alveolar epithelial cells and alveolar macrophages. *Alcohol*, 2019: 80:65-72.

Morris NL, Yeligar SM. Role of HIF-1α in alcohol-mediated multiple organ dysfunction. *Biomolecules*, 2018: 8(4).

Yeligar SM, Guidot DM, Brown LAS, Cribbs SK. Dysregulation of alveolar macrophage PPAR□, NADPH oxidases and TGFβ1 in otherwise healthy HIV-infected individuals. *AIDS Research and Human Retroviruses*, 2017: 33(10):1018-1026.

Yeligar SM, Mehta AJ, Harris FL, Brown LAS, Hart CM. Peroxisome proliferator-activated receptor □ regulates chronic alcohol-induced alveolar macrophage dysfunction. *American Journal of Respiratory Cell and Molecular Biology*, 2016: 55(1):35-46.

Mehta AJ, Yeligar SM, Elon L, Brown LA, Guidot DM. Alcoholism causes alveolar macrophage zinc deficiency and immune dysfunction. *American Journal of Respiratory and Critical Care Medicine*, 2013: 188(6):716-723.