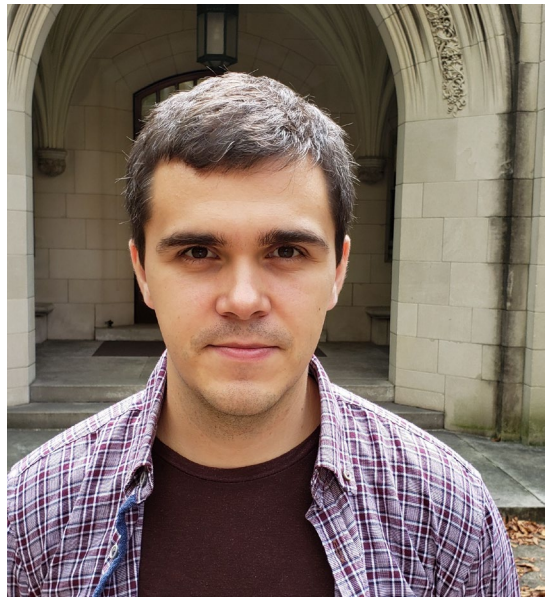
ATS 2022 Highlights

Respiratory Structure and Function Early Career Professionals

Get to know members of the RSF Assembly



Sergey Gutor, MD, PhD

Research Fellow
Division of Allergy, Pulmonary and Critical Care Medicine
Vanderbilt University Medical Center

sergey.gutor@vumc.org *Twitter:@Sergey_Gutor*

Is your research clinical, basic science or translational?

Basic, translational

Tell us about your research?

My current area of research is diseases that affect the small airways, including post-deployment respiratory syndrome and chronic obstructive lung disease. We are studying pathological abnormalities, inflammation, and pathways involved in disease initiation and progression.

Where do you see yourself in 5 years?

My goal is to have a productive lab team in academia to address my scientific interest in the field of cardiopulmonary diseases.

What do you find is the major benefit of RSF Assembly Membership?

Membership in the RSF Assembly is a great way to become involved in a research community and build a professional network. RSF provides a platform to discuss novel research and opportunities to gain experience in teamwork and leadership.

ATS

Please follow us on Twitter @ATS_RSF ***and like our Facebook page!***

If you or someone you know would like to be featured as an ATS RSF ECP please email Katrina Tonga (katrina.tonga@sydney.edu.au)

ATS 2022 Highlights

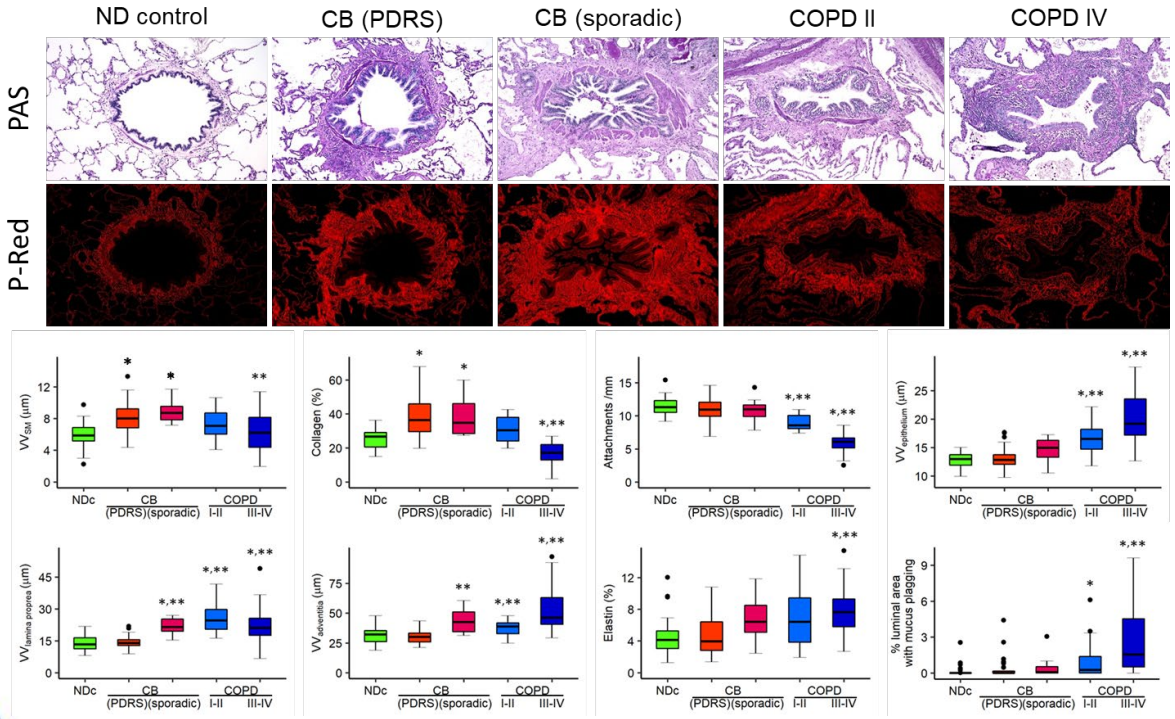
Respiratory Structure and Function Early Career Professionals

Sergey Gutor, MD, PhD

Research Fellow

Division of Allergy, Pulmonary and Critical Care Medicine

Vanderbilt University Medical Center



Postdeployment respiratory syndrome in soldiers with chronic exertional dyspnea

Objective: To characterize the pathology of constrictive bronchiolitis (CB) in military personnel deployed to Iraq and/or Afghanistan.

Methods: We studied lung tissue specimens obtained from 50 soldiers with CB, 8 patients with sporadic CB, 55 former smokers with GOLD stages I-IV COPD, and 25 lifelong non-smokers without history of chronic lung diseases (ND control). Serial paraffin tissue sections were stained with hematoxylin and eosin, periodic acid-Schiff, and PicroSirius Red. Additional sections were immunostained with primary antibodies against elastin, α-smooth muscle actin, neutrophil elastase, CD19, CD4, or CD8. Small airways (<1 mm in diameter) were examined for inflammatory cells infiltration, epithelial height, thickening of lamina propria, smooth muscle (SM) and adventitia, alveolar attachments, collagen and elastin content.

Results: Small airways from soldiers with CB and patients with sporadic CB had increased smooth muscle thickness (8.0±1.9μm in CB and 8.9±1.6μm in sporadic CB vs. 5.8±1.8μm in ND controls) and increased collagen density (37.4±11.5% in soldiers and 38.8±14.7% in sporadic CB cases vs. 25.5±5.5% in ND controls). In COPD, small airways were characterized by two-step wall remodeling (increased collagen content in mild/moderate disease 31.2±7.6% and then reduced up to 16.8±6.3% in advanced disease), increased epithelial height, alveolar attachment loss and frequent luminal mucus plugging.

Conclusion: Small airway pathology in soldiers with CB is similar to patients with sporadic CB, but distinct from COPD patients. Smooth muscle enlargement and fibrosis are present in small airway walls in both groups of CB patients. In addition, lymphocytic infiltration and activation of adaptive immune signaling are characteristic of symptomatic military personnel with history of deployment to Iraq and/or Afghanistan and patients with sporadic CB, suggesting a common immune-related etiology.

ATS

Please follow us on Twitter @ATS_RSF *and like our Facebook page!*

If you or someone you know would like to be featured as an ATS RSF ECP please email Katrina Tonga (katrina.tonga@sydney.edu.au)