ATS Highlights 2025:

Environmental, Occupational, and Population Health Assembly Early Career Professionals

Jeremy Hua, MD, MPH
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Tell us about yourself.
I am an occupational pulmonologist and researcher dedicated to diagnosing, preventing, and treating occupational lung diseases.

Is your research clinical, basic science, or translational?
Primarily clinical and translational.

Tell us about your research.
My research focuses on characterizing lung particulate matter to understand occupational exposures and using epidemiologic tools to highlight disparities in occupational risk factors.

Where do you see yourself in 5 years?
Part of a multi-disciplinary team using research, clinical care, and public policy efforts to make meaningful differences for the health of at-risk workers in dusty trades.

How has the EOPH Assembly contributed to your career?
The EOPH Assembly is made up of thoughtful leaders that started as a welcoming and warm group. It has since become a network of collaborators with shared interest in applying public health approaches for tackling lung diseases that are entirely preventable.

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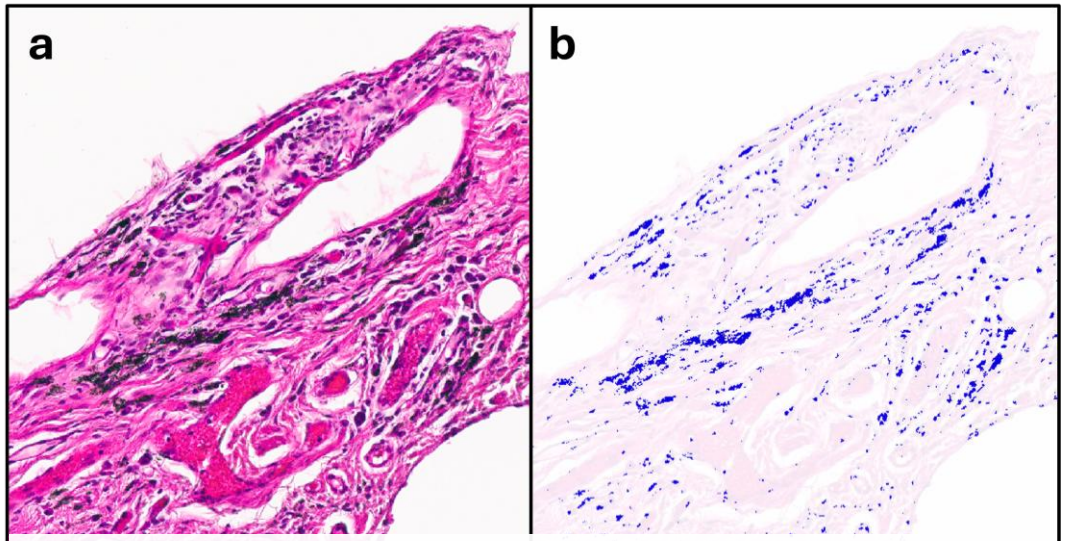

59-year-old veteran (never smoker) with 19 total months deployed to Afghanistan showing: **a)** lung anthracotic pigment, and **b)** automated pigmented dust identification using QM-PM.

Increased Lung Particulate Burden in Post-9/11 Military Veterans with Deployment-Related Distal Lung Disease

Rationale: Ascertaining the contributions of specific environmental toxicants in causing post-9/11 deployment-related distal lung diseases (DDLD) remains challenging.

Methods: We used quantitative microscopy (QM-PM) to measure the *in situ* burden of pigmented and birefringent lung particulate matter in 24 veterans with DDLD, 10 smokers with respiratory bronchiolitis (RB), and 10 healthy controls.

Results: Anthracotic pigment fraction in DDLD was similar to RB (1.69% vs 1.37%, P=0.72), and was significantly greater than in healthy controls (0.52%, P=0.02). Pigment fraction in veterans was significantly associated with higher reported burn pit smoke exposure (P=0.02), but not sandstorms or diesel exhaust.

Conclusions: Deposition of anthracotic lung dust from burn pit smoke may be important in the pathogenesis of DDLD.

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