

## PH.D. DISSERTATION DEFENSE OF



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### **The Impact of LCN2 in the Lung Inflammatory Response to Agricultural Dust Exposure**

Agricultural workers have increased risks of developing debilitating respiratory conditions such as chronic obstructive pulmonary disease (COPD) due to their repetitive exposure to organic dust particles. Lipocalin-2 (LCN-2) is an acute phase protein that plays crucial roles in mediating immune responses to inflammatory stimuli in multiple tissues. Its role in the lung immune response to inflammatory stimuli other than bacteria, however, has not been well studied. This research examines the paradoxical roles of LCN2 in the immune response to extracts of dusts collected from swine confinement facilities (DE), in an effort to identify protective vs. harmful roles of LCN2 in the context of lung inflammation. Additionally, the cross-talk between LCN-2 and the anti-inflammatory cytokine IL-10 in mediating the tissue repair process was also examined. Taken together, these investigations highlight a novel role for LCN-2 in promoting lung repair following organic dust-induced inflammation, mediated in part by IL-10. These findings may substantially impact the breadth of knowledge available for researchers in this field, and consequently help discriminate between the protective and detrimental roles exerted by LCN2 in response to inflammation in the lungs. This can further lead to the potential use of LCN-2 as a diagnostic marker or its therapeutic use in the treatment of debilitating lung inflammatory conditions.

**Monday, July 25, 2022**

**12:00PM (PST)**

**Zoom Link: <https://ucr-edu-hipaa.zoom.us/j/98766407623?pwd=TCtZMkhVcjUrVzRQN05zSHZ2dG8zdz09>**

**Meeting ID: 987 6640 7623 Passcode: 361247**