

## At-A-Glance

The Immune, Infectious and Dermal Disease Prevention Program primarily focuses on hazard identification to prevent and minimize the effects of work-related dermal and immune diseases. This snapshot shows recent accomplishments and upcoming work.

### What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Immune, Infectious and Dermal Disease Prevention Program works with partners in industry, labor, trade associations, professional organizations, and academia. The program focuses on these areas:

- Reducing immune abnormalities (including immune aspects of asthma) associated with workplace exposures.
- Reducing occupational skin disorders and exposures that result in disease.
- Reducing transmission of infectious diseases in the workplace.

### What do we do?

- Conduct research to better understand the impact and basic mechanisms of occupational exposures to chemical, biological, or infectious agents on the immune system.
- Identify occupational allergens that cause disease in workers in high burden industries.
- Research occupational chemical exposures to develop strategies to prevent exposure and raise awareness of skin injury materials.
- Maximize resources by using statistical modeling to prioritize chemicals to research, rather than investigating all potentially hazardous chemicals.
- Publish **Skin Notation (SK) Profiles**, hazard warnings used worldwide, to alert workers and employers to the health risks of skin exposures to workplace chemicals.
- Improve surveillance for hazard identification, exposure assessment, and risk characterization of chemicals absorbed through the skin that lead to immune or systemic toxicity (e.g., damage to internal organs).
- Increase awareness of occupational immune and dermal health issues through collaborations with NIOSH sector programs; contributions to field investigations; and publications and presentations of research findings.
- Investigate the routes of transmission of influenza to help assess risk of infection in healthcare workers exposed to influenza patients and determine how the virus utilizes the infected patient's own cellular machinery to mount an infection.

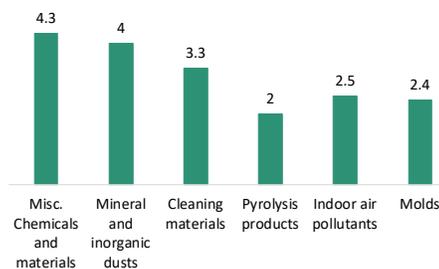
### What have we accomplished?

- Completed a **Health Hazard Evaluation** investigating the microbial hazards at a medicinal cannabis manufacturing facility.
- Published numerous research articles on the impact of antimicrobials on allergic disease and novel mediators of allergic disease.
- Published research which identified surgical masks and N95 respirators as potential personal bioaerosol samplers for the assessment of influenza exposure.
- Conducted investigations on the pulmonary immunology induced by repeated exposure to *Stachybotrys chartarum*.

### What's next?

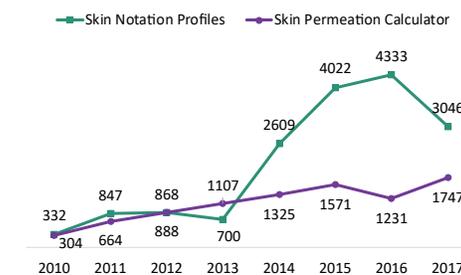
- Conduct studies on how exposure to high-level disinfectants influence anti-viral immunity and susceptibility to influenza infection.
- Identify hazardous dermal exposures that occur in oil and gas workers.
- Investigate the immunotoxicity of perfluoroalkyl substances (PFAS), including those found in firefighting foams.
- Characterize murine pulmonary immune responses to repeated inhalation exposure to the indoor fungal contaminant, *Aspergillus versicolor*.
- Utilize animal models to further investigate the pathogenesis of isocyanate-induced asthma.
- Publish research on intervention strategies for the multi-drug resistant pathogen *Candida auris*, which is an emerging public threat in the Health Care Sector.
- Investigate the relationship between increases in contact dermatitis cases and biocide raw material exposures used during paint manufacturing.

### Most frequently reported causes of occupational asthma 2009-2012



Source: NIOSH Work-Related Lung Disease Surveillance System (eWoRLD)

### Number of downloads of web resources:



Source: NIOSH Program Records

### Publication Spotlight: Landscape Plant Selection Criteria for the Allergic Patient

