METPHAST

Midwest Emerging Technologies
Public Health & Safety Training Program
NIEHS SRP R25 Program

• NIEHS has legislative mandate to support training of personnel who evaluate human health hazards at facilities at which hazardous substances are located using short courses, continuing education, and graduate-level training in environmental and occupational health and safety

• Superfund Research Program Occupational and Safety Education Programs on Emerging Technologies (R25)
METPHAST Program Partners

University of Minnesota
School of Public Health
Driven to Discover™

The University of Iowa
College of Public Health

Dakota County Technical College

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METPHAST Program Goals

• 2013-2016: Develop comprehensive array of focused, web-based modules about nanotechnology health and safety

• 2016-2021+: Develop comprehensive web-based curriculum on occupational hygiene, with emphasis on applications to worker health and safety in emerging technologies

• Use flexibly to serve unique needs of different learners
  – Academic courses
  – Continuing education
  – Individual lessons
  – Educating the public
Existing Modules
Elements of Existing Modules

• **Lesson**
  – Narrated screencast, about 1-hour long
  – Knowledge checks, in some applications
  – Example: Condensation Particle Counters in Module 11

• **Hands-on Activity**
  – Guide for Instructors
  – Instructions for Learners
  – Narrated video showing how to conduct the activity
  – Example: Hands-on Activity Demonstration: Dust Generation
Application of Content

• Academic course at University of Minnesota
  – PubH 6100, Topics: Environmental Health (Nanotechnology Health & Safety)
  – Offered for the first time in Spring 2016
  – Offered again currently: https://ay16.moodle.umn.edu/course/view.php?id=11119

• Continuing education
  – On-line modules with graded knowledge checks and automatic certificate generation
  – "Audience" includes CIHs, CSPs, CHMMs, COHNs, PEs
  – Available at http://www.sph.umn.edu/academics/ce/courses/

• YouTube channel: http://youtube.com/METPHASTProgram

• Nano-Link: http://nano-link.org/

• Future plans
  – Shorter learning assets
  – Dedicated METPHAST Program web site
  – Flipped industrial hygiene curriculum
Air Pollution Exercise (For Communities)

• Objectives
  – Identify different types of air pollution
  – Describe sources of air pollution around you
  – Describe the health effects of air pollution
  – Identify techniques to reduce exposure in the home and community
  – Develop a plan to take further action steps

• Guides

• Structure
  – No lectures
  – Participants encouraged to use resources, mostly electronic
  – Instructor should prepare for local issues and resources
  – Instructor should facilitate and assure questions are answered
Resources for Air Pollution Exercise

• Readings in Participant Guide
• METPHAST Program: Introduction to Aerosols (Draft), from 3:15-7:25
  – Aerosol particle sources created by human activities
  – Sizes of different types of particles
  – https://www.youtube.com/watch?v=paavEoiRp8c
• EPA: My Environment
  – Look for Air Quality Index in local zip code
  – https://www3.epa.gov/enviro/myenviro/
• EPA: Toxic Release Inventory (TRI)
  – Gather information on releases by zip code, city, county, and/or state
  – https://www.epa.gov/tri/
• Other resources, including from METPHAST Program, listed at end
Other Exercises

• What is happening in my zip code?
  – My Environment
  – myRTK (my Right-to-Know)
  – ECHO (Enforcement and Compliance History Online)

• Hazard Control Refresher – Using the ERG
  – Uses the ERG app

• NIOSH Pocket Guide Performance Measure
  – Not designed specifically for mobile use

• In development…
  – Tox Town exercise
  – Generic app exercise