



Predicting Exposure to Hazards Using the CPWR Exposure Control Database

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CPWR – The Center for Construction Research and Training

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Presenters

▪ **Babak Memarian, Ph.D.**

- Director of Exposure Control Technologies Research, CPWR
- Co-chair of NIOSH/CPWR Engineering Control Workgroup
- Ph.D. in Construction Management
- M.S. and B.S. in Civil and Construction Engineering & Project Management
- Research Area:
 - High Reliability Production Systems
 - Lean Construction
 - Safety
 - Prevention-through-Design (PtD)

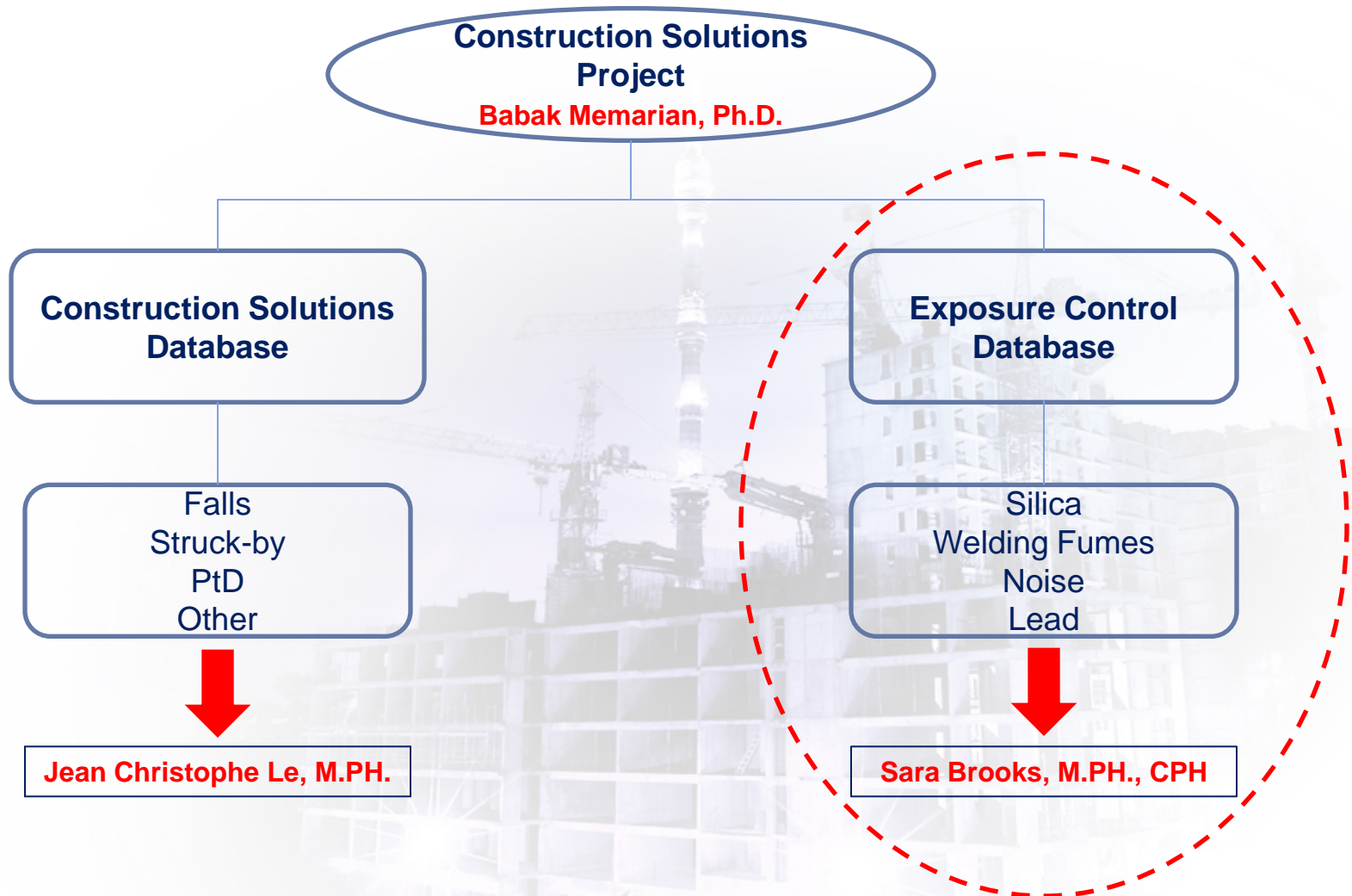
▪ **Sara Brooks, M.PH., CPH**

- Industrial Hygienist, CPWR
- Master of Public Health in Environmental and Occupational Health
- Certified in Public Health
- B.A. in Spanish
- Research Area: Exposure Assessment

Agenda

1. Construction Solutions Project
2. The Exposure Control Database
3. Website Walkthrough
4. Challenges
5. Data Collection Forms

Construction Solutions Project



The Exposure Control Database

Objectives:

- Create a searchable collection of objective exposure measurements
- Help small- and medium-size contractors predict workers' exposure to four key hazards:
 - Silica
 - Welding Fumes
 - Noise
 - Lead
- Highlight the effectiveness of engineering controls

Sources of Data:

- Peer-reviewed literature
- Government reports
- External partners

Website Walkthrough

www.ecd.cpwr.constructionsolutions.org

CPWR's Exposure Control Database is an interactive tool for the construction industry that helps you predict exposure to workplace hazards.

To start, choose a hazard

SILICA

WELDING
FUMES

NOISE

LEAD

Challenges and Solutions


Challenges:

- Data availability
- Data quality

Solutions:

- Two sampling forms developed by CPWR to streamline the data collection process and improve data quality:
 - Respirable Crystalline Silica
 - Noise
- Forms contain:
 - Sampling recommendations
 - Contact information
 - Fields for required variables and measurements

Respirable Crystalline Silica

| CONTACT INFORMATION | | CPWR  | | DATE |
|--|------------------------|--|-------------------|---|
| Name: | | THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING | | Note: All white fields are required. |
| Company: | | Respirable Crystalline Silica | | |
| Email: | | Objective Data Collection Form | | |
| Phone: | | | | |
| SAMPLING LOCATION | | | | |
| Site Name: | | State: | Country: | |
| Number of workers/Company Size: | | | | |
| Type of Worksite: <input type="checkbox"/> Active worksite <input type="checkbox"/> Simulated worksite <input type="checkbox"/> Laboratory | | | | |
| Project Type: <input type="checkbox"/> Renovation <input type="checkbox"/> Demolition <input type="checkbox"/> New Construction | | | | |
| Comments: | | | | |
| SAMPLING ENVIRONMENT | | | | |
| <input type="checkbox"/> Outdoor <input type="checkbox"/> Partial Enclosure ¹ <input type="checkbox"/> Indoor <input type="checkbox"/> Confined Space | | | | |
| Temperature (°F): | Relative Humidity (%): | Wind Direction ² : | Wind Speed (mph): | |
| | | <input type="checkbox"/> Upwind <input type="checkbox"/> Downwind | | |
| | | <input type="checkbox"/> Crosswind | | |
| Comments: | | Other Ventilation Sources: | | |
| WORK CONDITIONS | | | | |

Noise

| *CONTACT INFORMATION (required) |
|---------------------------------|
| Name: |
| Company: |
| Email: |
| Phone: |



| *DATE (required) |
|------------------|
| |

****Note: All white fields are required.**

| *MEASURING DEVICE (required) | | | |
|--|---|---|-------------------------|
| Device Type: <input type="checkbox"/> Sound Level Meter <input type="checkbox"/> Dosimeter <input type="checkbox"/> Smartphone App | | Phone type: <input type="checkbox"/> iPhone <input type="checkbox"/> Android <input type="checkbox"/> Other | |
| Pre-Calibration <input type="checkbox"/> | External microphone? <input type="checkbox"/> Yes <input type="checkbox"/> No | Windscreen: <input type="checkbox"/> Yes <input type="checkbox"/> No | Make/model or app name: |
| Post-Calibration <input type="checkbox"/> | | | |
| Comments: | | | |

| SAMPLING LOCATION | | | |
|-------------------|--|-------------------|-------------------------------|
| Site Name: | *Environment (required): <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor | Temperature (°F): | *Wind speed (mph) (required): |
| Comments: | | | |

| EQUIPMENT INFORMATION | |
|------------------------|---------------------------|
| *Tool type (required): | *Manufacturer (required): |
| | |

Thank You!

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