



# Stephanie Thornton

## Current Position

Assistant Health Scientist II

## Discipline Areas

- > Computational Modeling
- > Exposure and Risk Assessment
- > Chemical Engineering

## Years' Experience

1 Year

## Joined Cardno

2018-2019 Co-op

2021 Full-time

## Education

- > BS, Chemical Engineering, University of Pittsburgh, December 2020

## Summary of Experience

Stephanie Thornton is an Assistant Health Scientist with Cardno ChemRisk in the Pittsburgh office. She is a graduate of the University of Pittsburgh, where she earned a B.S. in Chemical Engineering and a minor in Chemistry. Her primary areas of expertise and training include chemical engineering, computational modeling, thermodynamics, mass and energy transport, organic chemistry, reaction kinetics, system dynamics and modeling, and process design. She holds 20 hours of SACHE certificates in process safety, chemical reactivity hazards, runaway reactions, and risk assessment. At Cardno ChemRisk, she has utilized her quantitative skills to model chemical emissions, evaluate chemical exposures, and code a physiologically based-pharmacokinetic (PBPK) model in the R coding language. She has experience with several computational models and software such as MATLAB, IHMOD, and R.

## Significant Projects

### Computational Modeling

Designed an approach for combining e-cigarette use (topography) parameters with a PBPK model for ethanol to predict user BACs over time. Coded the inhalation model in R coding language and made it publicly available through publication.

Performed model input research and mass balance quality control work as part of a project to develop a PK model intended to assess nicotine kinetics in the human body during and after e-cigarette use.

Compared inputs between EPA's All-Ages Lead Model (AALM) and "O'Flaherty" PBPK Lead Model to perform exposure assessments using both models.

Provided model mass balance quality control and coding work as part of a project that used a refined cobalt biokinetic model for human health risk assessments of metal-on-metal hip implants.

Developed and coded an industrial hygiene modeling tool that incorporated one-zone and two-zone inhalation models with a user-friendly interface.

Determined necessary inputs and used two-zone model for diacetyl inhalation exposure modeling and assessment.

### Exposure and Risk Assessment

Participated in an industrial hygiene sampling project involving carbon monoxide (CO) concentrations, ultrafine particulate matter (UFPM) concentrations, carbon dioxide (CO<sub>2</sub>) concentrations, temperature, relative humidity, and sound levels.

Organized data and reviewed ventilation calculations for an industrial hygiene simulation study to recreate a mechanic's asbestos exposure when working on compressors.

#### Certificates

- > Completed more than 20 SACHe certificates of safety achievement in topics such as hazard identification and risk analysis, atmospheric dispersion, source models, chemical reactivity hazards, toxicological hazards, runaway reactions, process safety hazards, and basics of laboratory safety.

#### Membership to Professional Societies

- > Society of Women Engineers (SWE)
- > American Institute of Chemical Engineers (AIChE)

#### Professional Honors/Awards

- > 2020 Trailblazer Award for University of Pittsburgh Swanson School of Engineering Co-op Program
- > 2019 Best Undergraduate Poster Presentation at Allegheny-Erie Society of Toxicology Annual Conference

#### Publications

- > More, S.L., S.A. Thornton, J.R. Maskrey, A. Sharma, E.J. de Gandiaga, T.J. Cheng, Ernest S. Fung, A.J. Bernal and A.K. Madl. 2020. PBPK modeling characterization of potential acute impairment effects from inhalation of ethanol during e-cigarette use. *Inhalation Toxicology*. 32(1), p. 14-23.

#### Published Abstracts

- > More, S.L., S.A. Thornton, J.R. Maskrey, A. Sharma, E.J. de Gandiaga, T.J. Cheng, Ernest S. Fung, A.K. Madl and A.J. Bernal. 2020. Characterization of acute impairment effects from inhalation of ethanol during e-cigarette use. Abstract #3125. Society of Toxicology (SOT) Annual Meeting and ToxExpo. March 10-14, 2019, Baltimore, MD.
- > Hallett, L.A., R.C.D. Reid, S.A. Thornton, D.E. Badger, C.E. Gillie and K.M. Unice. Hazard Characterization of a Food Truck Work Environment. Abstract #627. American Industrial Hygiene Conference & Exposition (AIHce) May 20-22, 2019, Minneapolis, MN.