INTRODUCTION
In response to community concerns regarding industrial air pollution, Beyond Toxics and Oregon State University (OSU) initiated a community-engaged research study characterizing residential exposure to polycyclic aromatic hydrocarbons (PAHs) in West Eugene, OR. This neighborhood is next to a wood preservative facility known to emit PAHs via use of creosote (Figure 1).

Beyond Toxics is an environmental justice organization that has been tracking odor complaints in West Eugene for over a decade, stemming from a local wood preservative facility. They have worked with the Community Engagement Core of the Pacific Northwest Center for Translational Environmental Health Research on prior projects.

METHODS
- Recruitment conducted by Beyond Toxics via social media, community outreach and word of mouth.
- Recruited individuals living within 1 mile of the facility to participate for seven days.
- Environmental passive samplers deployed by Beyond Toxics and OSU staff in three rings around the facility at 17 locations (Figure 1). Thirteen residents in the area wore and returned personal passive wristband samplers (Figure 3).
- Samplers analyzed by the Chemical Exposure Core of the Pacific Northwest Center for Translational Environmental Health Research for 63 PAHs.
- All activities conducted under Oregon State University Institutional Review Board approval (IRB-2021-1087)

RESULTS & DISCUSSION
Environmental samplers
- 40 PAHs detected across all samplers (Figure 2)
- Most abundant by concentration were naphthalene, acenaphthene and 2-methylnapthalene. Concentrations of these PAHs were significantly higher in the inner ring, closest to the facility (Figure 3A).

Wristband samplers
- 22 PAHs detected across all samplers (Figure 2)
- All chemicals detected in the wristband also detected in environmental samplers (Figure 2).
- Nine PAHs detected in majority of wristbands (Figure 3B).
- Concentrations of naphthalene, 1-methylnapthalene and 2-methylnapthalene were significantly higher in the inner ring closest to the facility (Figure 3B).

Impact of geographic direction from the facility
- Levels of PAHs appeared highest in the northeast (Figure 4A,B).

Comparison to other studies
- Levels in the environmental samplers were comparable to those in densely populated industrialized cities, albeit lower than levels of concern to health.

DISCUSSION
- In both the environmental and wristband samplers, PAHs associated with creosote were significantly higher in the inner ring.
- Levels of naphthalene in the environmental samplers were below levels of health concern yet indicate that those living or working near the facility had higher exposures to certain PAHs.
- The distribution of naphthalene, with levels最高 in the NE, correlates with community reports of chemical odors.

ACKNOWLEDGEMENTS
This project was funded by the Pacific Northwest Center for Translational Environmental Health Research at Oregon State University (grant #P30 ES030287).

We gratefully acknowledge the West Eugene participants for their time and dedication to this study.

CONFLICT OF INTEREST STATEMENT
Kim Anderson and Diana Rohlman have a conflict of interest related to this study. These researchers own or are related to someone who owns a company that provides services related to the silicone wristbands.