

# Report to Scientific Guidance Panel



## *EHL Update and Preliminary Results for Some Environmental Phenols and Polycyclic Aromatic Hydrocarbons*

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# EHLB Updates

- Staff changes
- Methods in production
- Proficiency testing results
- Project sample analysis status
- Recent study results
- Future work

# Staff Changes

## New Staff

- Ying Li - Environmental Laboratory Scientist II
  - currently working on DAPs method

## Vacancies

- Environmental Laboratory Scientist position
  - Actively recruiting

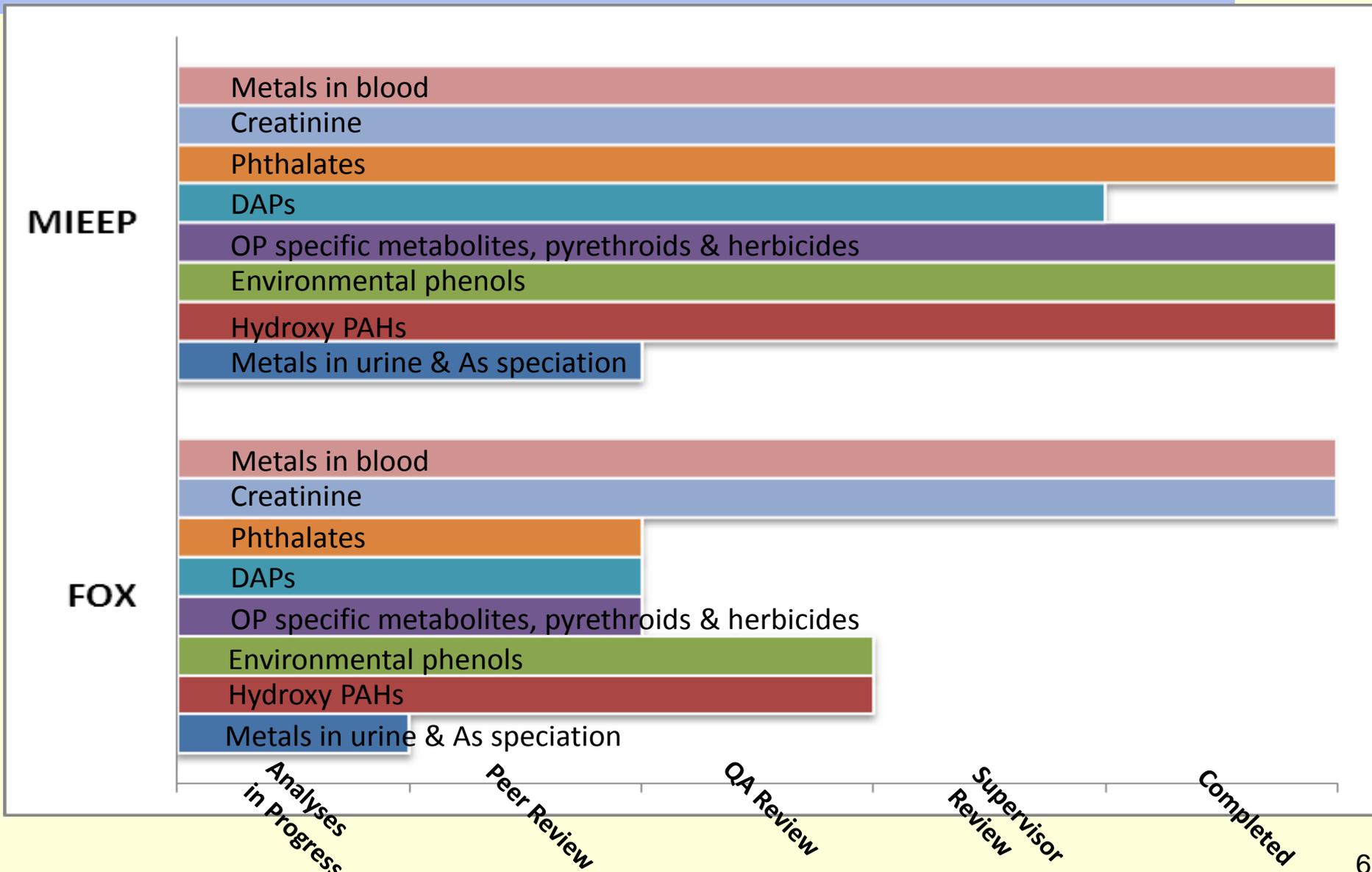
# Methods In Production

- **Metals in Blood**
- **Creatinine**
- **Phthalate Metabolites**
- **DAPs** (dialkyl phosphate metabolites of organophosphorus pesticides)
- **OP specific metabolites, pyrethroids & herbicides**
- **Environmental phenols**
- **Hydroxy PAHs**
- **NEW!**
- **Metals in Urine**
- **Arsenic Speciation**

# CDC Proficiency Testing Results

- Non-persistent organic analytes
  - Submitted results for 29 analytes
- Arsenic Speciation
  - Submitted results for 6 analytes
- Improving laboratory methods

# Project Sample Analyses Status



# MIEEP Project Overview

## Maternal and Infant Environmental Exposure Project (MIEEP)



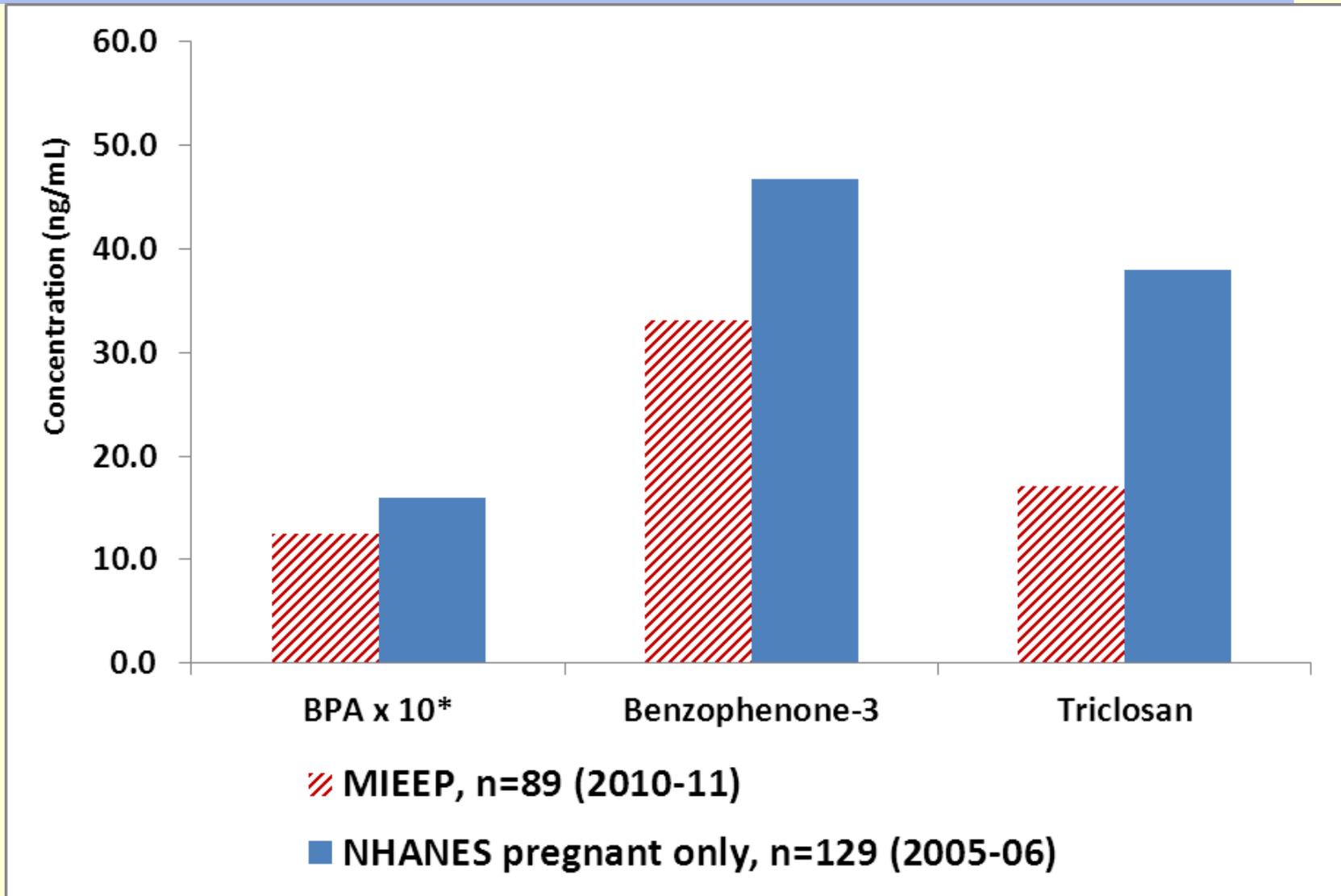
- Collaboration with UCSF and UC Berkeley
- Convenience sample from SFGH
- 89 mothers enrolled; 65 mother-infant pairs

# MIEEP Environmental Phenol Results

Phenols	LOD (ng/mL)	DF %	GM	95th
BPA	0.2	94	1.25	6.51
Benzophenone-3	0.5	93	33.1	2162
Triclosan	1.0	88	17.2	887

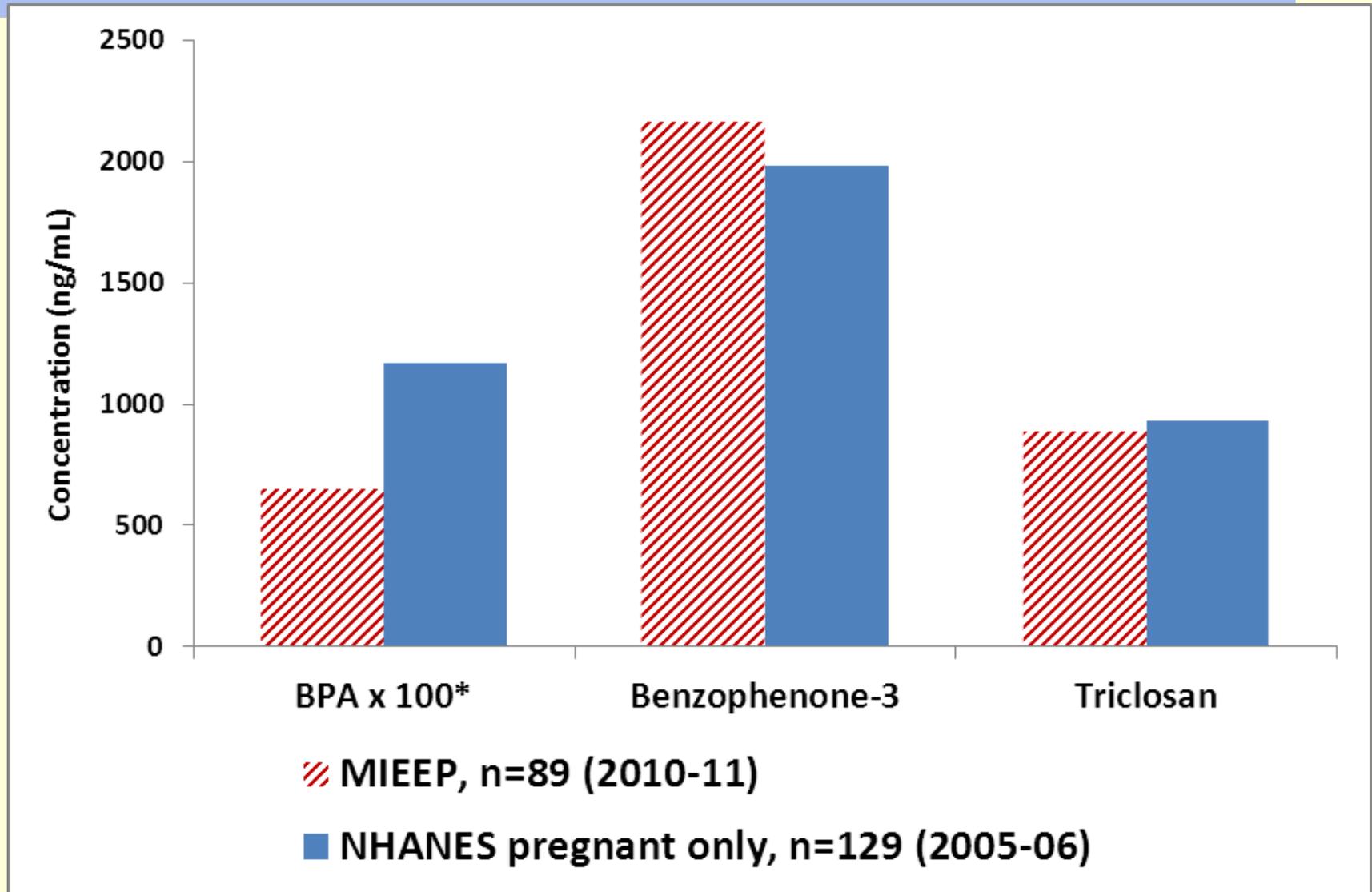
- HPLC/MS/MS method can detect fractional ppb levels
- BPA, benzophenone-3 & triclosan were measurable in the majority of the participants

# Geometric Mean Comparison of 3 Phenol Concentrations: MIEEP Women vs. NHANES Women



\*BPA Values are scaled as indicated

# 95<sup>th</sup> Percentile Comparison of 3 Phenol Concentrations: MIEEP Women vs. NHANES Women



\*BPA Values are scaled as indicated

## UC Irvine - Environmental Pollutants and Women's Reproductive Health

### (Women's Health and the Environment, WHE)

WHE study question:

- Are changes in urinary PAH biomarker concentrations associated with changes in urinary and serum markers of ovarian function?
- Convenience sample of 51 women aged 18-44 years residing in Orange County, CA (collected Sept 2010-March 2012)
- Eligibility: not using hormonal contraception, not surgically sterile or diagnosed infertility, not pregnant

# WHE Study Biospecimen Collection

- Baseline visit
  - blood sample (plasma for hormonal biomarkers of ovarian reserve, whole blood for DNA)
  - urine sample
- Daily: for 6 menstrual cycles
  - Microelectronic dipstick monitored urinary excreted hormones
  - Participants kept diary documenting illness, medication use, alcohol, cigarettes smoked, etc.
- Monthly: on day 10 of menstrual cycle
  - Collected first morning urine sample and stored in home freezer for up to 2 months
  - Transferred to UCI laboratory for final storage at  $-80^{\circ}\text{C}$

# UC Irvine – WHE Results

OH-PAHs	LOD (pg/mL)	DF (%)	Range (pg/mL)
<b>1-NAP</b>	25	100	135 - 19200
<b>2-NAP</b>	20	100	538 - 71500
<b>2-FLUO</b>	20	100	35.7 - 1210
<b>3-FLUO</b>	20	98	<LOD - 850
<b>9-FLUO</b>	37	100	48.4 - 1460
<b>1-PHEN</b>	10	100	18.3 - 453
<b>2-PHEN</b>	10	92	<LOD - 175
<b>3-PHEN</b>	10	100	12.8 - 292
<b>1-PYR</b>	20	96	<LOD - 509

# Future Work

- Complete FOX analyses and data review
- Analyze Pilot BEST and Laboratory Collaboration samples
- Prepare for Expanded BEST project
- Develop automated sample prep process
- Cross-train employees