



# Program Update

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Biomonitoring California

Scientific Guidance Panel Meeting

March 27, 2014 – Oakland, CA

# Outline

- Program Announcements
- Ongoing Biomonitoring Projects
  - Maternal and Infant Environmental Exposure Project (MIEEP)
  - Firefighter Occupational Exposures (FOX) Project
  - Biomonitoring Exposures Study (BEST)
- New Collaboration
  - Genetic Disease Screening Program

# Program Announcements

- Welcome to Dr. Nerissa Wu
- Legislative Report
- Program Evaluation
- CDC Funding Opportunity Announcement
- Thanks to Dr. Michael Lipsett

# Project Updates

- MIEEP
  - Hydroxy-BDE results returned to participants in December 2013
  - Publications in progress
- FOX Project
  - Publications in progress

# Pilot BEST Status

Recruitment	Collection	Data	Results
Recruit participants from random sample	Collect blood and urine	Enter data	Usability testing – English
Schedule home visits	Collect exposure assessment questionnaires	Analyze 1 <sup>st</sup> set of chemicals (Cd, Hg, Mn, Pb and PFCs)	Return 1 <sup>st</sup> set of results (Dec. 2012)
Consent & enroll participants at visit	Abstract information from medical records	<b>Analyze 2<sup>nd</sup> set of chemicals</b>	Return 2 <sup>nd</sup> set of results

## Legend

Complete

In progress

**Complete since last SGP**

Not yet started

Analyze data

Analyze participant understanding

# Pilot BEST Lab Analyses

Analyte	Nov 2013	March 2014
Metals in blood	Complete	Complete
Perfluorinated compounds (PFCs)	Complete	Complete
Polybrominated diphenyl ethers (PBDEs)	Complete	Complete
Polychlorinated biphenyls (PCBs)	In progress	<b>Complete</b>
Organochlorine pesticides (OCPs)	In progress	<b>Complete</b>
Creatinine	Complete	Complete
Phthalates	Complete	Complete
Hydroxy polycyclic aromatic hydrocarbons (OH-PAHs)	Complete	Complete
Environmental phenols	In progress	<b>Complete</b>
Pyrethroid and organophosphate (OP) metabolites	Complete	Complete
Metals in urine	Complete	Complete
Arsenic speciation	In progress	<b>Complete</b>
Perchlorate	In review	<b>Complete</b>

# Expanded BEST Status

Recruitment	Collection	Data	Results					
Recruit participants from random stratified sample	Collect consent forms & exposure assessment questionnaires	<i>Enter data</i>	Return 1 <sup>st</sup> set of results					
<table border="1"> <thead> <tr> <th>Legend</th> </tr> </thead> <tbody> <tr> <td>Complete</td> </tr> <tr> <td><i>Complete since last SGP</i></td> </tr> <tr> <td>In progress</td> </tr> <tr> <td>Not yet started</td> </tr> </tbody> </table>	Legend	Complete	<i>Complete since last SGP</i>	In progress	Not yet started	<i>Collect blood and urine</i>	Analyze 1 <sup>st</sup> set of chemicals	Return 2 <sup>nd</sup> set of results
	Legend							
	Complete							
	<i>Complete since last SGP</i>							
In progress								
Not yet started								
<i>Abstract information from medical records</i>	Analyze 2 <sup>nd</sup> set of chemicals	Analyze participant understanding						
		Analyze data						

# Expanded BEST Enrollment

	Target (n=450)		Total Enrolled (n=341)*		Subset for All Chemical Analyses (n=218)**	
Race/Ethnicity	N	%	n	%	n	%
Hispanic (English)	75	18%	78	23%	38	17%
Hispanic (Spanish)	75	18%	59	17%	41	19%
Asian/Pacific Islander	150	36%	114	33%	80	37%
White	60	14%	47	14%	30	14%
Black	60	14%	43	13%	29	13%

\* **Blood metals** and **PFCs** will be analyzed for participants with usable samples.

\*\* **All chemical panels** will be analyzed for participants who were selected from a subset of the enrolled participants with a complete set (urine, blood, and serum) of usable lab samples (n=248).



# Expanded BEST Enrollment (Continued)

	Target (n=450)		Total Enrolled (n=341)*		Subset for All Chemical Analyses (n=218)**	
Gender	n	%	n	%	n	%
Male	210	50%	161	47%	103	47%
Female	210	50%	180	53%	115	53%
Age	n	%	N	%	n	%
≤ 45 years	210	50%	159	47%	98	45%
≥ 46 years	210	50%	182	53%	120	55%

\* **Blood metals** and **PFCs** will be analyzed for participants with usable samples.

\*\* **All chemical panels** will be analyzed for participants who were selected from a subset of the enrolled participants with a complete set (urine, blood, and serum) of usable lab samples (n=248).

# California Biobank

## Genetic Disease Screening Program (GDSP)

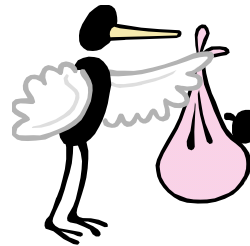
### Prenatal Screening

Offered to pregnant woman by prenatal care provider;  
Approximately 350,000 cases annually;

Blood drawn in 1<sup>st</sup> and/or 2<sup>nd</sup> trimester;

Patient demographics:

- Age at term
- Race
- Weight
- Residency



### Newborn Screening

Approximately 90% of all California births (500,000 annually);

Heel stick/blood spot;

Patient demographics:

- Sex
- Birth weight
- GA at delivery
- Time/date of birth
- Time/date of sampling
- Race/ethnicity (maternal)
- Residency

### California Biobank

Samples from Fresno, Kern, Kings, Madera, Tulare, Orange, and San Diego counties

# Biobank process

Available to researchers:

- Excludes genetic disease registry cases
- Includes all samples with patient consent
- Cost is \$50/sample + analyst time

Process:

- Program registers with GDSP
- Obtains IRB approval
- Requests samples



# Acknowledgements

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Phillip Gonzaga

Nancy Lopez

Jed Waldman

Shirley Cao

Tan Guo

Sandy McNeel

Miaomiao Wang

John Chen

Weihong Guo

June-Soo Park

Yunzhu Wang

Yu-Chen Chang

Suhash Harwani

Myrto Petreas

Berna Watson

Robin Christensen

Sara Hoover

Sissy Petropoulou

Nerissa Wu

Sabrina Crispo-Smith

Simon Ip

Laurel Plummer

Rana Zahedi

Dina Dobraca

Lauren Joe

Martha Sandy

Jun Qiang Zhou

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Indranil Sen

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Laura Fenster

Farla Kaufman

Jianwen She





# Results Database

Amy J. Dunn, MPH

Laurel Plummer, Ph.D.

Office of Environmental Health

Hazard Assessment

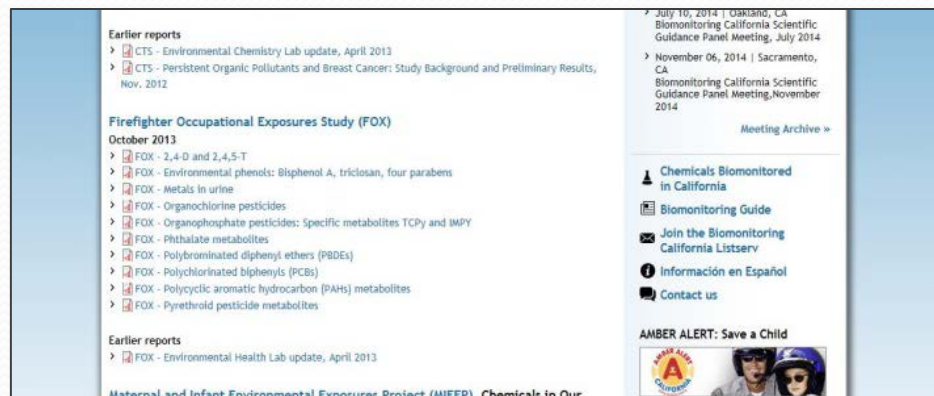
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# Why create a results database?

## Current Results Postings

- Updating / edits require new upload each time
- Each table is separate



The screenshot shows a website interface with a list of reports and project information. The main content area is titled "Earlier reports" and lists several reports with dates and titles. Below this, there is a section for "Firefighter Occupational Exposures Study (FOX)" with a sub-section for "October 2013" listing various chemical groups. To the right, there is a sidebar with navigation links and a "Meeting Archive" section. At the bottom, there is a banner for "Maternal and Infant Environmental Exposures Project (MIEEP). Chemicals in Our..."



## Interactive Database

Enables:

- Customizable view of tables
- Download of values
- Easier updating



The screenshot shows an interactive database interface with two columns of buttons. The left column is titled "Select Project" and contains four buttons: "All Projects", "California Teachers Study (CTS)", "Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS)", and "Firefighter Occupational Exposures (FOX) Project". The right column is titled "Select Chemical" and contains four buttons: "All Chemical Groups", "Environmental Phenols", "Herbicides", and "Metals".

# Elements of the new results database

- Results organized in two ways:
  - By project
  - By chemical or chemical group
- Filtering capabilities
- Easy pathways to additional information on chemicals, projects, terms used
- As in current PDF tables, summary statistics provided for each project



# Launch is coming soon!

Currently:

- Final data review
- Fine-tuning navigation
- Finalizing supporting content

Next:

- Launch announcement
  - To our listserv subscribers & others
- More features may be added post-launch
  - E.g., additional printing capabilities



# Thank you

- Uli Weeren, Studio Weeren
  - Web designer & developer
  - <http://www.studioweeren.com/>
- Partial funding from the Centers for Disease Control and Prevention

# Demonstration

