Program News and Updates

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Presentation to the Scientific Guidance Panel Meeting
July 20, 2017 – Richmond, CA

BIOMONITORING CALIFORNIA
MEASURING CHEMICALS IN CALIFORNIANS
Updates to Biomonitoring
California Staff

<table>
<thead>
<tr>
<th>Kathleen Attfield</th>
<th>Amy Dunn</th>
<th>Ying Li</th>
<th>Juan VillaRomero</th>
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<tbody>
<tr>
<td>Lauren Baehner</td>
<td>Jeff Fowles</td>
<td>Hiu Mei Ma</td>
<td>Jed Waldman</td>
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<td>Hyoung Gee Baek</td>
<td>Ryszard Gajek</td>
<td>June-Soo Park</td>
<td>Miaomiao Wang</td>
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<td>Paramjit Behniwal</td>
<td>Qi Gavin</td>
<td>Julian Perez</td>
<td>Yunzhu Wang</td>
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<td>Reber Brown</td>
<td>Songmei Gao</td>
<td>Myrto Petreas</td>
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<td>Yu-Chen Chang</td>
<td>Elizabeth Hall</td>
<td>Thien Phan</td>
<td>Suzanne Wittwer</td>
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<td>Key-Young Choe</td>
<td>Sara Hoover</td>
<td>Martha Sandy</td>
<td>Nerissa Wu</td>
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<td>Robin Christensen</td>
<td>Shoba Iyer</td>
<td>Jianwen She</td>
<td>Greg Yeh</td>
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<td>Sabrina Crispo Smith</td>
<td>Duyen Kauffman</td>
<td>Dan Sultana</td>
<td>Rana Zahedi</td>
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<td>Josephine DeGuzman</td>
<td>Juliet Kinyua</td>
<td>Karyn Taylor</td>
<td>Let Zhang</td>
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<td></td>
<td>Grace Lau</td>
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<td>Jun Qiang Zhou</td>
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*Program budget was supplemented through the Budget Change Proposal (BCP) process as a temporary measure following the 2014 reduction in CDC funding.
# Project Updates

<table>
<thead>
<tr>
<th></th>
<th>Sample Collection</th>
<th>Lab Analysis</th>
<th>Results Return</th>
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</thead>
<tbody>
<tr>
<td>BEST</td>
<td>Complete</td>
<td>Arsenic retesting complete</td>
<td>• Complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perchlorate complete</td>
<td>• August 2017</td>
</tr>
<tr>
<td>FREES</td>
<td>In progress</td>
<td>In progress</td>
<td>• Initial (pre-foam or furniture replacement) results returned</td>
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<td></td>
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<td></td>
<td>• Partial 6-month results will be returned in August 2017</td>
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<tr>
<td>ACE I</td>
<td>Complete</td>
<td>Complete</td>
<td>• August 2017</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Community meeting scheduled for September</td>
</tr>
<tr>
<td>ACE II</td>
<td>Complete</td>
<td>In progress</td>
<td>• January 2018</td>
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</tbody>
</table>
Biomonitoring Exposures Study (BEST)

- Original analytical panels have been completed
- Perchlorate results are scheduled to be returned to participants in August 2017
- 218 urine samples were analyzed for arsenic
  - 57 of the 218 were found to have arsenic levels ≥ 20 µg/L
  - 30 were found to have inorganic arsenic levels ≥ 20 µg/L
  - Of the 15 retested, 5 were again found to have inorganic arsenic levels ≥ 20 µg/L
- 56 remaining urine samples will be tested for arsenic
Foam Replacement Environmental Exposure Study (FREES)

<table>
<thead>
<tr>
<th>Total # Participants = 28</th>
<th>Initial sample</th>
<th>6-month sample</th>
<th>12-month sample</th>
<th>18-month sample</th>
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<tbody>
<tr>
<td>Total</td>
<td>28</td>
<td>26*</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Samples collected</td>
<td>28</td>
<td>26</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Results returned</td>
<td>28</td>
<td>15**</td>
<td>0</td>
<td>0</td>
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</table>

*Two participants withdrew from the study after initial sample collection.
** Packets are scheduled for return in August 2017.
Asian/Pacific Islander Community Exposures (ACE) Project

- Currently conducting notification of participants with elevated metals levels
  - One participant was found to have elevated blood mercury
  - Of 100 participants, 54 had total urinary arsenic levels ≥ 20 µg/L
    - 26 participants had inorganic arsenic levels ≥ 20 µg/L
- All results will be returned to participants in August 2017
- Community meeting, open to the public, will be held on September 9, 2017, in San Francisco
Environmental Justice Activities

- Asian/Pacific Islander Community Exposures (ACE) II
- East Bay Diesel Exposure Project
- Community outreach and engagement
  - Survey
  - Community meetings/webinars
  - Newsletter
The California Regional Exposure (CARE) Study

- Eight regions, based on geography and population
- Conduct sampling in approximately one region/year, with 300-500 participants per region
- Biomonitoring for metals and per- and polyfluoroalkyl substances (PFASs) and collection of exposure data
- Potential to include additional chemical panels, multiple samples per participant, intervention studies, etc. for a subset of participants
CARE Study: Developing our message

- Cross-department discussions to set objectives
- Consulted with communications experts to hone that message
- Focus groups conducted in English and Spanish
  - Motivational message
  - Images
  - Study name
Are there chemicals in your body that could harm your health? Learn more by joining the CARE Study.
Are there chemicals in your body that could harm your health?

Join the California Regional Exposure (CARE) Study to learn about:

- Lead and other chemicals in your body
- Actions you and your family can take to help reduce your contact with these chemicals.

Biomonitoring California is doing this study to measure and compare chemicals in people across the state, starting in Los Angeles County. This information will support efforts to reduce chemical exposure in Californians and improve public health.

We are looking for 500 people to join our study. Participation is free and you will receive a $10 gift card. If you are selected, you will be asked to answer a short survey, provide a urine sample, and have a small amount of blood drawn.

¿Hay sustancias químicas en su cuerpo que podrían dañar su salud?

(Haga clic aquí para información en Español)
California Regional Exposure (CARE) Study

Study of metals and other environmental chemicals in adults across the state, conducted one region at a time

The goal of the California Regional Exposure (CARE) Study is to measure and compare environmental chemicals in people across the state. This information will support efforts to reduce chemical exposure in Californians and improve public health.

The study will measure levels of selected metals in urine and/or blood, and levels of perfluoroalkyl and polyfluoroalkyl substances (PFASs) in serum. Participants will be recruited from eight regions of the state, with one to two regions covered each year depending on resources.

In each region, we will:

- Enroll between 300-500 adults, representing different racial and ethnic backgrounds, income levels, and communities within the study area
- Collect information from participants to identify potential exposure sources
- Collect blood and urine samples
- Measure levels of selected metals and perfluoroalkyl and polyfluoroalkyl substances
- Return individual results to participants
- Hold community meetings to describe overall study findings
Participant Selection

1. Prescreening pool
2. Select 500 participants to approximate LA County demographics
3. Send out welcome packet
4. Internet participants (English & Spanish)
5. Paper participants (English & Spanish)
6. Additional language participants
Welcome to the CARE Study

- Packet includes informed consent, exposure survey, and appointment scheduling calendar

**Internet Participants**
Log in to website and complete steps electronically

**Paper Participants**
Receive and return materials through the mail

**Additional Language Participants**
Complete study steps with an interpreter
Data Tracking and Monitoring

- Salesforce platform will be used by staff to collect and monitor data
- Internet participants will log in to system to complete study steps
- Automated system within Salesforce to send out reminders of incomplete steps
- For non-Internet participants, the system will create task notifications for staff
Field set-up

- Phlebotomist/interviewer staff will be in Los Angeles for 12-15 weeks
- 3-4 events/week and some home visits
- Samples will be managed and stored in field office and periodically shipped back to the lab
## CARE Study: Proposed Timeline

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Region 1</th>
<th>Region 2</th>
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<tbody>
<tr>
<td>Jul 2017</td>
<td>• Submit IRB protocol</td>
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<tr>
<td>Aug to Dec 2017</td>
<td>• Outreach to community partners</td>
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<td></td>
<td>• Refine materials and tools</td>
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<tr>
<td>Jan 2018</td>
<td>• Start recruitment</td>
<td>• Begin outreach to community partners</td>
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<tr>
<td>Feb to Apr 2018</td>
<td>• Participant recruitment, enrollment, and sample collection</td>
<td>• Continue community partner outreach</td>
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<tr>
<td>May to Dec 2018</td>
<td>• Laboratory analyses</td>
<td>• Refine materials and tools</td>
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<tr>
<td></td>
<td></td>
<td>• Submit IRB protocol</td>
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<tr>
<td>Jan 2019</td>
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Questions and Discussion