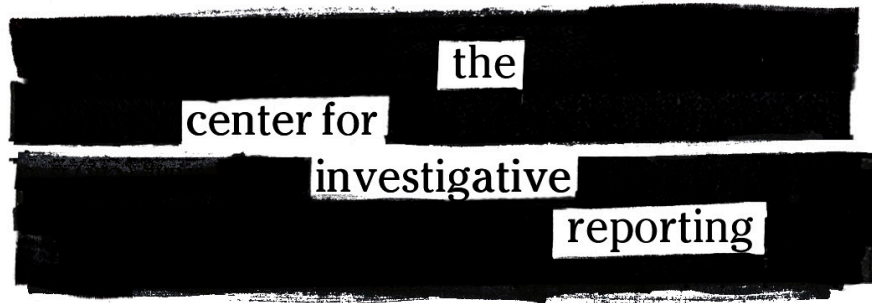


How one investigation raised awareness of community health risks



Lindsay Green-Barber, Ph.D.

Dark Side of the Strawberry

Through an 18-month investigation, reporters from The Center for Investigative Reporting acquired hundreds of pages of government records and spent hundreds – if not thousands – of hours crunching numbers and reporting on the ground across the country, ultimately finding that a particular class of pesticides – called fumigants – was being used at alarming rates in California’s strawberry industry. For example, CIR found that state regulators were allowing growers and chemical companies to use one pesticide at rates far beyond what scientists felt was safe. While fumigants have no health risks for strawberry consumers, the rates at which they were being used could have serious health implications for agricultural workers and communities surrounding strawberry fields.

This case study analyzes the effectiveness of CIR’s reporting, distribution and engagement strategies in achieving impact, or change. It will share CIR’s distribution and engagement strategy for the resulting investigation, “[The Dark Side of the Strawberry](#),” explain how we set baselines, and detail our methods for measurement. The analysis shows that CIR’s impact distribution, which featured local and national versions of the story, and on-the-ground community engagement resulted in increased awareness in affected communities. Furthermore, by engaging with a strong local stakeholder organization (in this case, the teacher’s union in Oxnard, California), the project ultimately helped spark structural changes in regulation and enforcement at both the county and state levels.

The Dark Side of the Strawberry and impact potential

In January 2014, CIR reporters Bernice Yeung and Kendall Taggart; senior editor Andrew Donohue; senior manager, engagement and community relations Cole Goins; and I had a conversation about The Dark Side of the Strawberry project's potential for impact. Yeung, Taggart and Donohue still were reporting, but they were starting to think about the story they would tell and how they would tell it. And because the potential risks associated with fumigant use are concentrated in geographic communities, our engagement and distribution team members knew they would need a specialized impact plan.¹

Through these early conversations we arrived at two main conclusions. First, it was clear to the CIR reporting team that the residents they were speaking with in communities where strawberries are grown had no idea they could be at risk. Second, as an analyst, I hypothesized that the close ties between the well-resourced chemical companies and the California Department of Pesticide Regulation meant that the potential for real, meaningful and lasting change at the level of state government was unlikely, at least in the short term. In other words, there were few actors within the state who had an incentive to act upon the information we would be making public through this investigation.

¹ CIR recognizes that in many areas of the U.S., local residents do not regularly access our website or other proprietary distribution channels as a source of news. When our findings are relevant to a particular community, we use social media; work to partner with trusted, relevant media outlets; and initiate our own public engagement initiatives to ensure that the information will reach the most affected communities and have the greatest potential for impact. Both of the previous research projects and anecdotes have provided support for the success of this strategy.

So we asked ourselves: Who does have an incentive to act? The answer: residents in the most affected communities. Thus, we identified a specific impact goal for The Dark Side of the Strawberry as an increase in awareness in the communities that are most affected by fumigant use.

But, how would we do this? And how would we know if we had succeeded or failed?

Setting baselines and gathering information:

In addition to residents not realizing they could face health risks, the reporters could tell from their initial on-the-ground reporting that many did not know what fumigants are at all. At CIR, we test such anecdotal information through data analysis and primary research whenever possible. In this case, there were no data available, so I designed a survey research project to gauge the level of awareness and knowledge about pesticide use in the strawberry industry and its associated health risks in one community with a thriving strawberry industry: Oxnard. The survey project was made possible with resources – both human and capital – from the University of Southern California.

The survey results confirmed that Oxnard residents were not overly concerned with pesticide use and its potential health effects. The vast majority of respondents (92 percent) had never reported concerns to anyone, and three-quarters believed that pesticides had not affected their health or were unsure.

The survey research project began in April 2014, when five CIR staff members and five students and staff from USC spent four days in Oxnard, conducting door-to-door surveys at a random sampling of addresses within the city limits.² Survey questions (Appendix A) were designed to determine a respondent's level of awareness about pesticide use, concern and awareness about their own potential risk, and to learn how 2 CIR purchased a database of all residential addresses in Oxnard, California, from Melissa Data. I generated a random sample of these addresses to serve as our survey sample.

Oxnard residents obtain news and information about their local community. The 1,600 surveys were distributed in English and Spanish. Of these, 800 were delivered directly to residents by CIR staff and USC students. Two-thirds (550) of the hand-delivered surveys were paper surveys and one-third (250) were postcards inviting respondents to text via Mobile Commons to participate (Appendix B).

Because we were unable to reach all 1,600 addresses during the four days, we mailed the remaining surveys (400 paper; 400 postcards for SMS or Web-based surveys). The paper surveys included a pre-addressed, metered postage-paid return envelope

In total, 240 surveys were completed (66 Spanish, 174 English). Of these, only one was completed via SMS. Given the total number of households in Oxnard (52,772), our survey results have a margin of error of 6 percent at a 95 percent confidence interval.³

The overall response rate for the surveys was 15 percent. The door-to-door response rate was nearly 20 percent (19.5 percent), and significantly higher when we consider only paper responses (155; 28.2 percent). The mobile response rate for door-to-door postcards with invitations to text in was less than 1 percent (1; 0.4 percent). The response rate for mailed surveys was just over 10 percent (82; 10.3 percent). Again, the paper-only response rate was much higher (82; 20.5 percent) and there were no mobile responses.⁴

3\ Households in Oxnard, California: 52,772

Sample: 240

(800 door to door, 800 mailed)

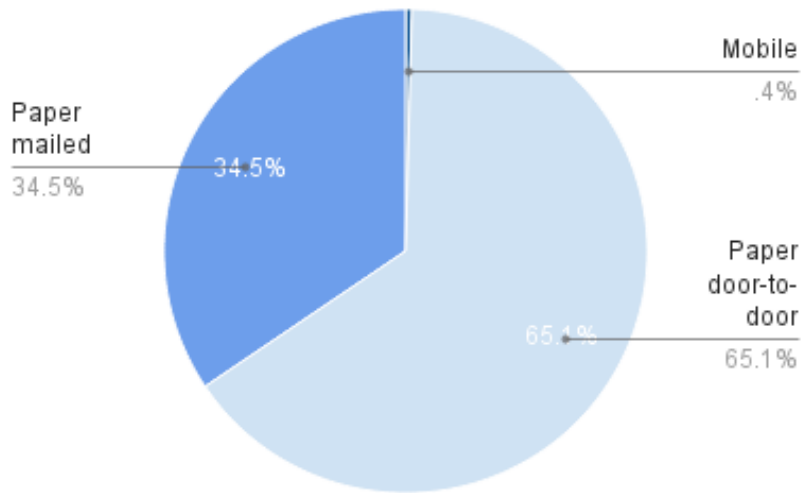
Door to door: 550 paper; 250 postcards

Mailed: 400 paper, 400 postcards

4 The survey results support the hypothesis that for mobile surveys to work, a media outlet must first have a direct relationship with an individual.

our house anymore.” We realized we were not

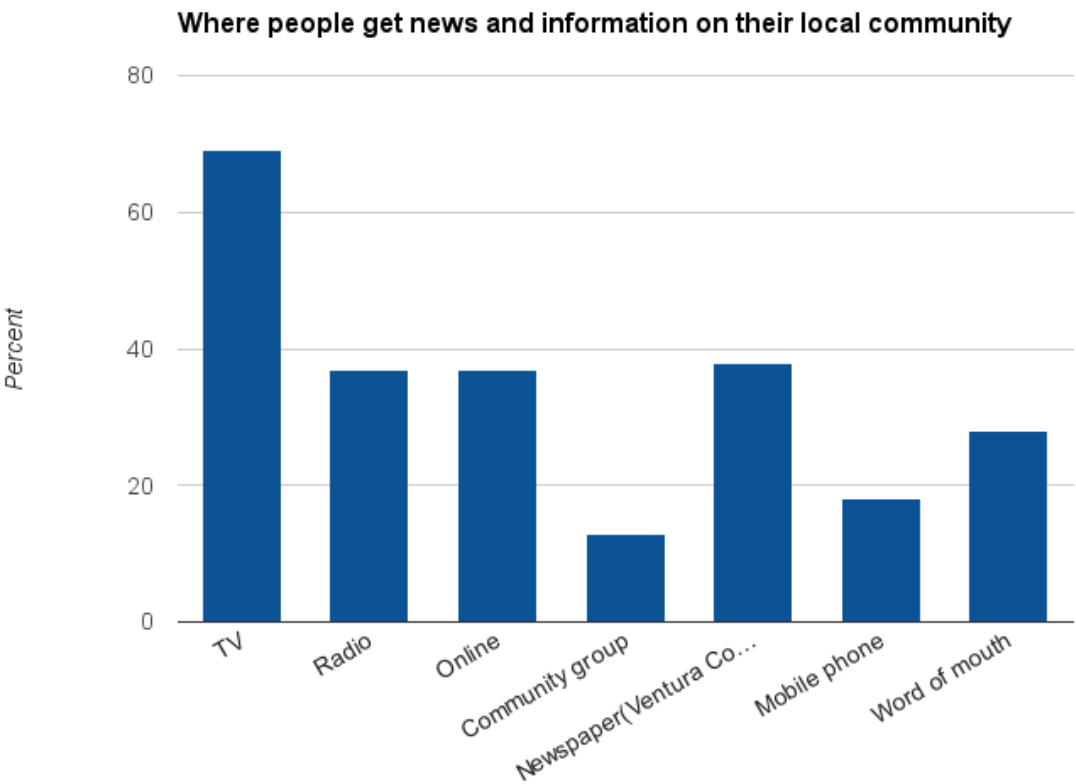
Survey responses by mode



While administering the surveys door-to-door, we realized one survey question was not effective. However, it turned out to elicit some of the most valuable information. We asked, “Do you know what a fumigant is?” The majority of respondents said yes (66 percent); however, they typically went on to say things like, “They don’t crop dust from planes anymore” or “We don’t bug bomb

specific enough about fumigants inserted into the land, but this also helped us to understand how little people living so close to strawberry fields were familiar with the practice of fumigant use in the strawberry industry. Furthermore, in Spanish, the verb “fumigar” (fumigate) is used interchangeably with “aplicar pesticidas” (apply pesticides). So, “fumigante” does not necessarily

denote fumigants, but instead is often used to mean “pesticide” (pesticide) in general. In order to inform our distribution and engagement strategy, we also asked respondents how they typically get news and information about their local community. Respondents cited TV, the Ventura County Star, radio and online news as top sources for news and information.





Story production, distribution and engagement

Getting the story: reporting as engagement
The Dark Side of the Strawberry investigation was based heavily on official records of pesticide applications across California and internal memos. But to gather additional information and identify individuals to humanize this story, CIR reporters spent time in communities where strawberries are grown.

In Oxnard, reporters identified Rio Mesa High School as a location of interest because very large strawberry fields surround it on all sides. Senior editor Andrew Donohue (who also served as a reporter on this story) and reporter Bernice Yeung both say that, at first, they were surprised by how ready teachers were to welcome report-

ers into the school. They quickly learned that because the teachers union in Oxnard is strong, teachers were able to invite reporters to visit the school and speak candidly with them without fear of repercussions. The reporters met with Rio Mesa teachers on multiple occasions, after hours, and even visited some teachers in their homes.

Through the reporting process, CIR also engaged with community members, learned their concerns and constructed a story that would meet their specific information needs. Reporters also familiarized themselves with the social, cultural and political layout of Oxnard, which became particularly important later in discussing strategy for having an impact on the situation. For example, reporters learned about the economic dependence of many community members on the strawberry industry – especially agri-

cultural workers, many of whom were dominant Spanish speakers.

As mentioned in the previous section, the reporters' participation in the pre-publication survey helped to not only validate their initial findings that knowledge about health risks associated with fumigant use was low in communities, but also gave them the opportunity to spend more time in a wide variety of neighborhoods.

Of the survey experience, Donohue said, "It gave us the confidence to know that we were on to something. We were worried that we would be coming in as outsiders to tell a story that everyone in the community already knew. Once we realized they had no idea about the core things we were learning, then we felt empowered to keep going."

Yeung echoed this point: "I'd say that what it did for me was confirm that there is a lot of public misinformation about pesticide use. During the early reporting, we were struck with how little people knew about fumigants (and thus how hard it was to have meaningful conversations/interviews with people about the issue). Conducting the handful of surveys that I did seemed to bolster that observation."

Understanding the awareness gap and the economic importance of the strawberry industry in the most affected communities helped inform CIR's decision to produce not only in-depth text stories and a data interactive, but also an animated historical explainer about the source of fumigants (World War II) and the growth of the industry during the mid-20th century. This lack of knowledge also became a focal point of follow-up stories showing how the state's top pesticide regulator misled residents in statements about fumigant use at a public hearing. Project elements are detailed later in this section.

Distribution

For all CIR projects, we ask ourselves two questions. First, how can we get this story to the broadest possible audience? And second, is there a specific community (geographic, of interest, stakeholder, etc.) that would benefit from this investigation? Especially when our reporting is relevant to marginalized communities, access to information can increase their power relative to institutions – whether governmental, corporate or other – enabling communities to take action.

In the case of *The Dark Side of the Strawberry*, we partnered with The Guardian US to guarantee the investigation would reach a large, national audience of strawberry consumers.⁵ Both our website and The Guardian's published the full text story, a data interactive that allowed users to pinpoint pesticide application across California, and the animation about the history of the strawberry industry. The text story was written for a national audience of strawberry consumers, focusing on pesticide use in the industry – including in growing organic strawberries, the historical context for both the strawberry industry and the fumigants used, and Department of Pesticide Regulation oversight of the industry.

We assumed that neither The Guardian nor CIR's own websites would be information hubs for the communities that could be most empowered by accessing this information: those living near where strawberries are grown. Instead, we had to find innovative ways to reach these communities.

Yeung says that, for local communities, "I realized that part of the job of this story was an explanatory role, and that we had to try to cut through the noise and be as clear as possible about what we know and don't know about the health impacts of fumigant use." In addition to

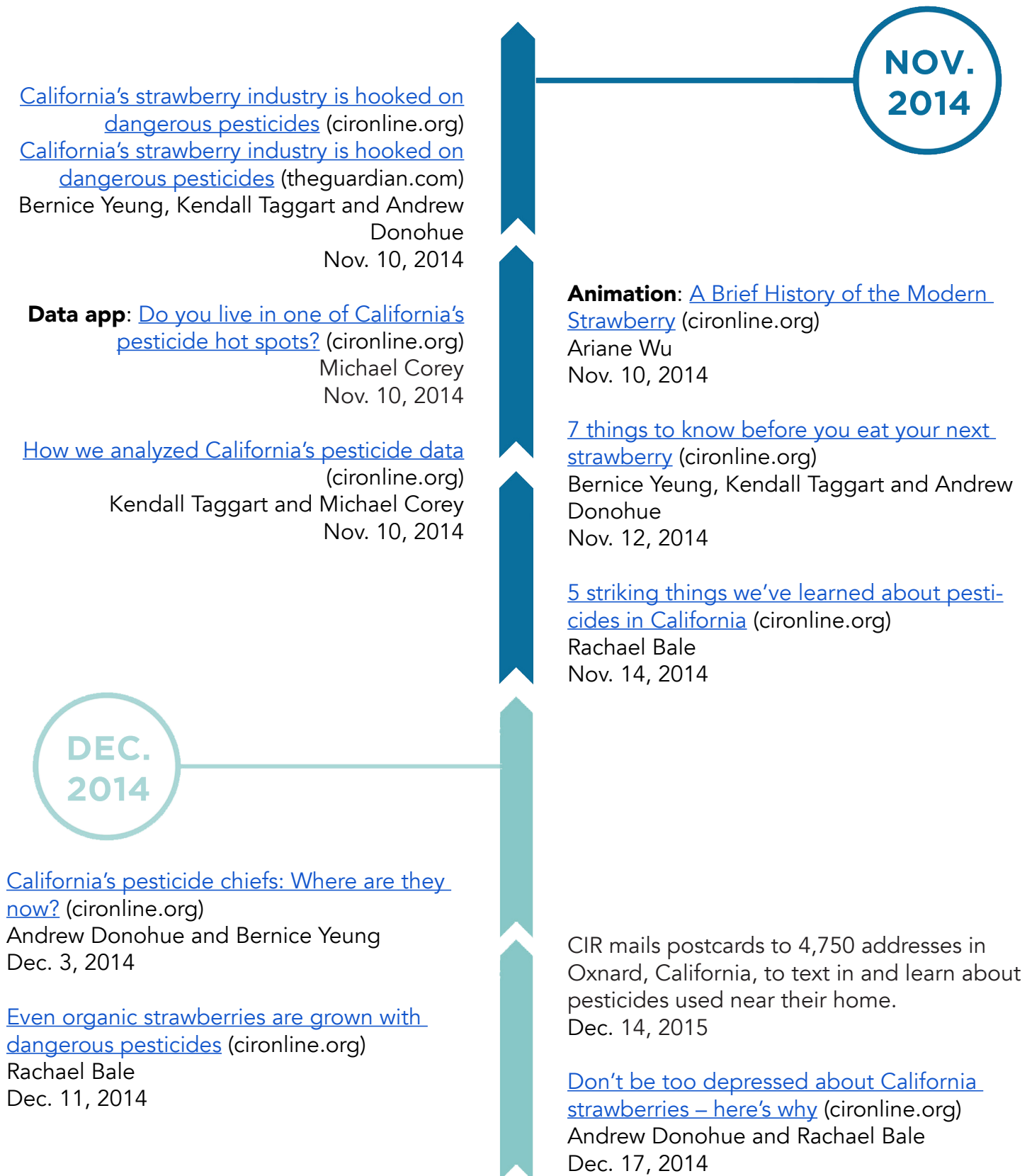
⁵ *Reveal* was not yet in regular production when *The Dark Side of the Strawberry* broke in October 2014.

the survey results, Donohue says that through the experience of walking around Oxnard and seeing bumper stickers for local radio stations on so many cars, “I understood how people affected by this story get their news – from the radio. That shaped how we thought about distribution and engagement.”

Ultimately, our engagement and distribution strategy had three parts, which are explained in detail later in this section:

- 1) Reach national audience(s) through cironline.org (later revealnews.org) and The Guardian.
- 2) Reach local audience(s) through the Ventura County Star and local radio interviews across California.
- 3) Directly engage audiences through postcards and a theater production in both English and Spanish.

Timeline of content and engagement



[California's 'vomiting gas' pesticide use rose 650 percent in 2 decades](#) (revealnews.org)

Rachael Bale
Jan. 15, 2015

JAN.
2015

FEB.
2015

[La industria de las fresas en California está adicta a peligrosos pesticidas](#) (revealnews.org)

Bernice Yeung, Kendall Taggart and Andrew Donohue
Feb. 26, 2015

CIR drama workshop at Rio Mesa High School
Feb. 21-27

["Alicia's Miracle"](#) (CIR/StoryWorks live production at Tides Theatre, San Francisco)
StoryWorks playwright Octavio Solis and Director Jenna Welch
Jan. 15 to Feb. 14 in San Francisco

["Alicia's Miracle"](#) (CIR/StoryWorks live production in Oxnard, California)
StoryWorks playwright Octavio Solis and Director Jenna Welch
Feb. 28, 2015

[How the state gutted the strict oversight of a popular strawberry pesticide](#) (Ventura County Star, in print and online)
Bernice Yeung, Kendall Taggart and Andrew Donohue
Feb. 28, 2015

MAR.
2015

[How a pesticide loophole increased cancer risk at a California school](#) (revealnews.org)

Andrew Donohue
March 20, 2015

[Use of Monsanto pesticide linked to cancer has boomed in California](#) (revealnews.org)
Rachael Bale
March 27, 2015

MAY
2014

[Potent pesticide still used at levels that defy scientists' warnings](#) (revealnews.org)
Andrew Donohue and Bernice Yeung
May 26, 2015

AUG.
2015

[How California's pesticide regulator spun a concerned community](#) (revealnews.org)

Andrew Donohue
Aug. 24, 2015

Engagement

To engage the individuals and communities most affected by pesticide use in the strawberry industry in Oxnard, CIR developed a two-pronged engagement strategy. We commissioned a one-act play based on the investigation, including engagement with students at Rio Mesa High School. We also sent a second set of postcards directly to Oxnard residents with information about pesticide use near their homes.

Because The Dark Side of the Strawberry contained so much information and the relationship between pesticide use and health risks was complicated, we felt that the project would be a good fit for StoryWorks, a CIR initiative that commissions playwrights to write theatrical plays in response to our investigations. We then produce the plays in the Bay Area and in other communities in which the story is relevant. StoryWorks provides an opportunity for an audience to connect with characters and complex investigations on an emotional level, while also learning the facts of an investigation.

For The Dark Side of the Strawberry, CIR commissioned [playwright Octavio Solis](#) to write a play in response to the investigation. He worked with the investigation's reporters, CIR's legal counsel and executive director, and StoryWorks Director Jenna Welch to ensure factual accuracy. The resulting play, "Alicia's Miracle," was produced in Spanish and English in San Francisco, from Jan. 15 through Feb. 14, 2015.

On Feb. 28, 2015, CIR produced "Alicia's Miracle" in English and Spanish at an Oxnard community center in front of an audience of more than 50 residents. The play was attended by community members, including concerned residents who had seen information about the play in the Ventura County Star; contacts of Todo Poder al Pueblo, a local activist group focused on migrants' rights; and others who came to see live theater.

In the weeks before our performance in Oxnard, CIR led a workshop with the drama class at Rio Mesa High School, the school where teachers

had participated in the investigation. Welch worked with students, who wrote their own one-act plays based on the facts of the investigation. A class of more than 30 students, ranging from freshmen to seniors, participated and created a series of short performances based on their own experiences and perspectives on the issues at the heart of our story – the strawberry fields around the school. One group of students publicly performed their own play alongside "Alicia's Miracle" in Oxnard. The students participated in a public discussion after the show, sharing that they enjoyed the experience and the exposure it gave them to both theater and journalism.

We also wanted to make the statewide data set our team had acquired available to affected residents because it revealed exactly where pesticides of concern were being applied in California and in what quantities. Using the data set, our team built an [interactive map](#) (based on data from the California Department of Pesticide Regulation, including 22 million applications and 1.5 billion pounds of pesticides) that showed all permitted pesticide applications across the state between 2003 and 2012. But since the map lived on our website, we wondered: Was there a way to deliver the data to residents in California's pesticide hot spots to show them which kinds of potentially dangerous chemicals were being applied in their area?

Furthermore, CIR wanted to test the finding from our preliminary survey experiment that the organization first would need a relationship with individuals before they would willingly engage with us by texting through Mobile Commons.

We linked our pesticide database to Mobile Commons using the mData feature and created a new campaign that would allow anyone in California to text in their address and receive information on the pesticides applied near them, complete with a link to our site, where they could learn more about what it all meant.

To reach the Oxnard residents who were nearest to pesticide applications, we used the pesticide data to determine the approximately 4,750 addresses (from the address database used for the original surveys) that were located in areas where the highest amounts of chemicals of concern

had been applied. To reach these residents, we designed a set of postcards that asked, in English and Spanish: “Ever wondered what kinds of pesticides are used on crops near you? Now you can find out.” Each card contained a brief overview of our investigation and invited the recipient to text in his or her address to our Mobile Commons campaign (also with both Spanish and English options) in order to receive the information from our pesticide database.

In mid-December, CIR mailed the postcards to the 4,750 addresses, inviting residents to text in and learn more about the pesticides applied in their area. We received 30 responses to the campaign during a one-month window – about a 0.6 percent response rate. We hypothesized that the low rate indicated that CIR is not a recognized source of news for residents in Oxnard, especially dominant Spanish speakers.

Impact

The ripple effect

The initial story performed well on CIR’s website and on The Guardian’s website (as measured by traditional Web metrics). It also was reported on in the following media outlets:

- [Monterey Bay Partisan](#) (11/12/14)
- Newser (11/11/14)
- [Visual.ly](#) (shared CIR’s “A Brief History of the Modern Strawberry” animation) (11/10/14)
- KPCC (11/11/14)
- [Monterey Herald](#) (11/10/14)
- Monterey County Weekly (11/13/14)
- The Californian (11/14/14)
- ProPublica’s weekly #MuckReads (11/14/14)
- [Inhabitat.com Design](#) (11/12/14)
- Natural News (12/4/15)
- The Society Pages (2/23/15)
- Editorial in [Ventura County Star](#) urging the Board of Supervisors to approve the commissioner’s call for more frequent information about pesticides (4/4/15)
- The Nation (4/6/15)
- Editorial In Ventura County Star and [The Californian](#) by a teacher says, “Time to implement wider school pesticide buffer

zones,” cites CIR investigation (5/11/15)

- Indy Bay (5/11/15)
- [Ventura County Star](#) (6/3/15)
- Huffington Post (6/4/15)
- Los Angeles Times (6/13/15)
- [The Center for Public Integrity](#) (8/11/15, 8/23/15)

Reporters involved in the project were invited to give broadcast interviews for:

- California Report/KQED (11/10/14)
- KPCC (11/11/14)
- Annenberg Radio (11/11/14)
- [KCRW](#) (3/31/15)

Other groups shared the story:

- California Teachers Association shared the story (citing The Monterey Herald) (11/13/14)
- [Civil Eats](#) (11/14/14)
- [Center for Effective Government](#) (12/8/14)
- Peace, Earth & Justice (4/29/15)

Government agencies and nongovernmental organizations also took action and made use of the content:

- Prior to publication but after CIR’s investigation, the state took steps to stop allowing growers to use high levels of pesticides.
- The [Center for Food Safety](#), a nonprofit organization, announced a pilot project with six strawberry farms to test its non-fumigant application process for planting strawberries. (12/11/14)
- Ventura County Supervisor John Zaragoza ordered an investigation into the use of pesticides around Rio Mesa High School after CIR’s investigation ran on the front page of the Ventura County Star. (3/4/15)
- The California Department of Pesticide Regulation is creating two new kinds of regulations: One would require that residents be notified when fumigants are applied, and a second would create special safety rules around schools. (3/17/15)
- The Ventura County Board of Supervisors [heard city managers’ findings](#) on pesticide issues in the strawberry fields surrounding Rio Mesa High School. (3/25/15)

- County Agricultural Commissioner Henry Gonzales responded to the CIR investigation, acknowledging that pesticide use exceeded limits. He argued that it wasn't high enough to be a danger to people, although former state scientists disagree. (3/24/15)
- Ventura County school district officials express concerns about pesticides near campuses at a school board meeting, citing CIR's investigation. (3/25/15)
- Oxnard Union school officials called on the state to provide a pesticide safety update. (3/26/15)
- Bi-Rite Market began asking growers about fumigant use and wrote a blog post. (3/30/15)
- Ventura County supervisors demanded more action and to know why the Department of Pesticide Regulation had recommended that the county agricultural commissioner delete slides in his presentation that showed the history of fumigant use, the areas that had been exempted from pesticide use limits, and schools within a quarter-mile of the fields. (4/7/15)
- Ventura County adopted a series of measures to improve the way it tracks pesticide air monitoring. (4/7/15)
- Pesticide monitors were put into fields around Rio Mesa High School to track air quality. (5/2/15)
- Hundreds attended a pesticide hearing at Rio Mesa High School. (6/4/15)
- Department of Pesticide Regulation top officials, including the director, appeared before the Ventura County Board of Supervisors to answer questions about the pesticide loopholes exposed in our story. (6/16/15)
- Driscoll's, one of the state's largest organic strawberry growers, promised to launch a pilot effort to grow organic strawberries without fumigants. (8/24/15)
- to her elected officials. (12/2/14)
- One member of the Ventura County Board of Supervisors emailed CIR reporters to say that the pesticide story had "a profound impact" on Ventura County. (8/27/15)
- A petition has been launched to close California's pesticide loophole that allows for fumigants to continue being used in the strawberry industry, despite national and international regulations banning these chemicals. (9/9/15)

Finally, the Online News Association awarded the Al Neuharth Innovation in Investigative Journalism Award to this project in 2015.

Taking all of these instances of impact together, a few trends emerge. First, media in communities in which strawberries are grown, such as Monterey County, picked up on this story and ran with it, suggesting that the information reached individuals in the most affected locations in California. Also, local media followed CIR's lead and focused on Rio Mesa as a central locus of this community challenge.

Second, teachers and the teachers union continued to be involved in this issue after the story broke. In the case of Oxnard, a local stakeholder organization, the [teachers union, engaged with and pressured](#) local officials, such as the Board of Supervisors and regulators with the state Department of Pesticide Regulation, to get this issue on the agenda, ultimately leading to government investigations and policy changes.

Post-project survey results

We waited six months after our last on-the-ground engagement in Oxnard before distributing 3,784 surveys to a random sample of residences. In three months, we received 330 valid responses⁶, an 8.7 percent response rate.⁷ The margin of error for this sample is 5 percent with a confidence interval of 95 percent.

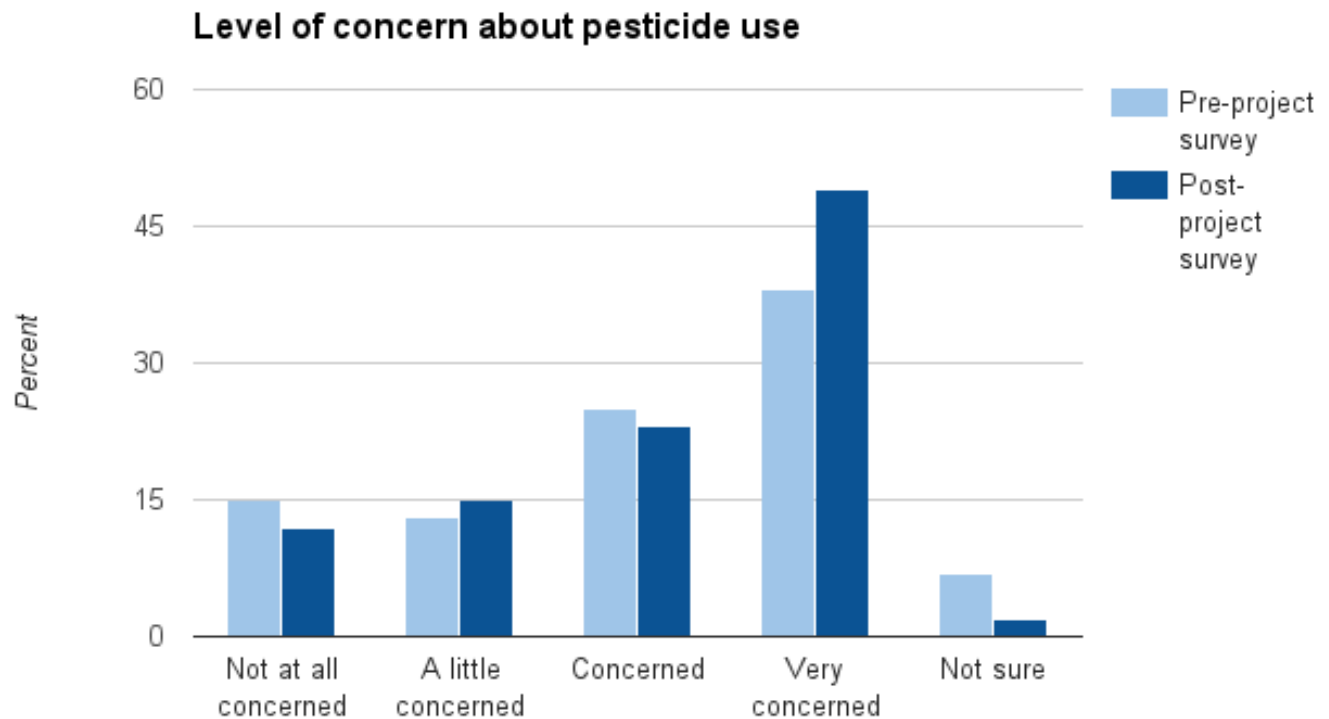
⁶ Universe of 52,772 residences and response rate 330, 5.4 percent margin of error at 95 percent confidence interval.

⁷ This is a 1.6 percent lower response rate than the preliminary mailed surveys.

And, individuals took action.

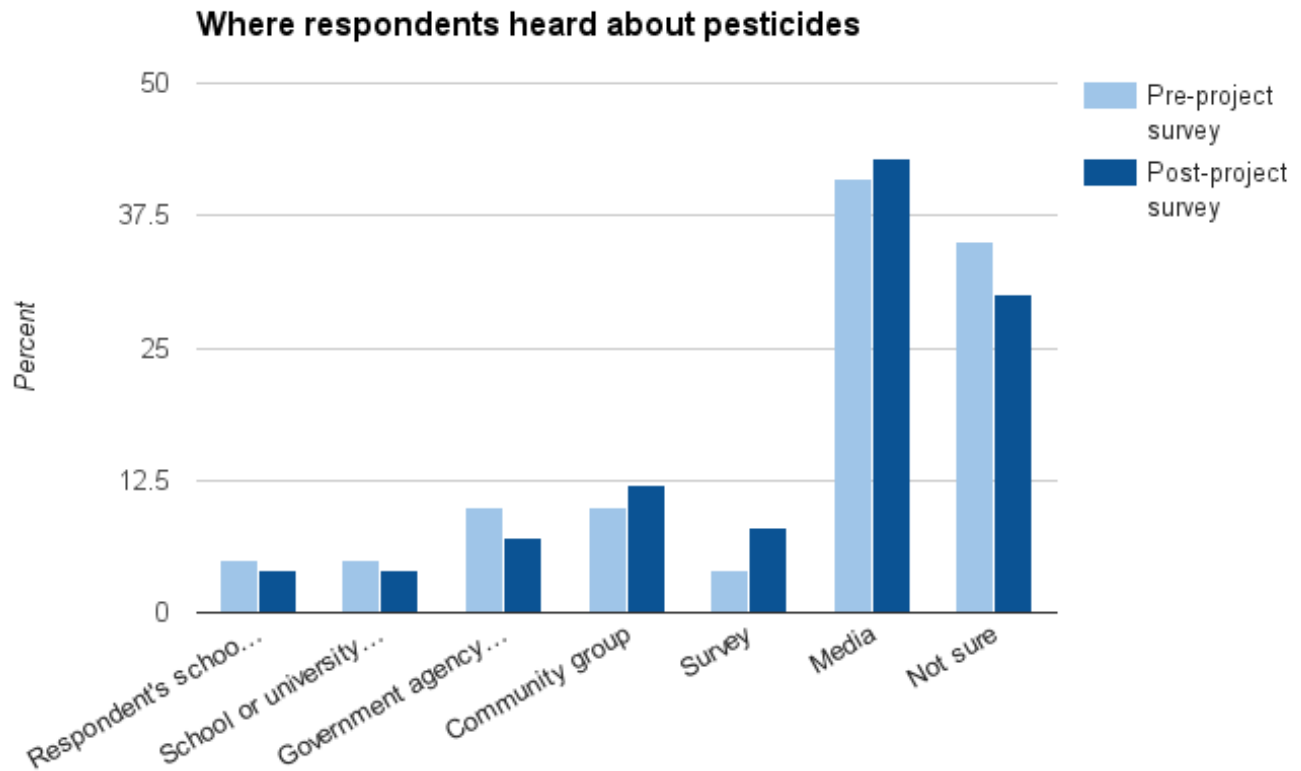
- CIR reporters received many emails from readers in response to this investigation.
- A woman in Santa Maria, California, wrote

A simple comparison of pre- and post-project survey results identified some notable shifts in responses. First, respondents reported higher levels of concern about being exposed to pesticides while at home or at work.

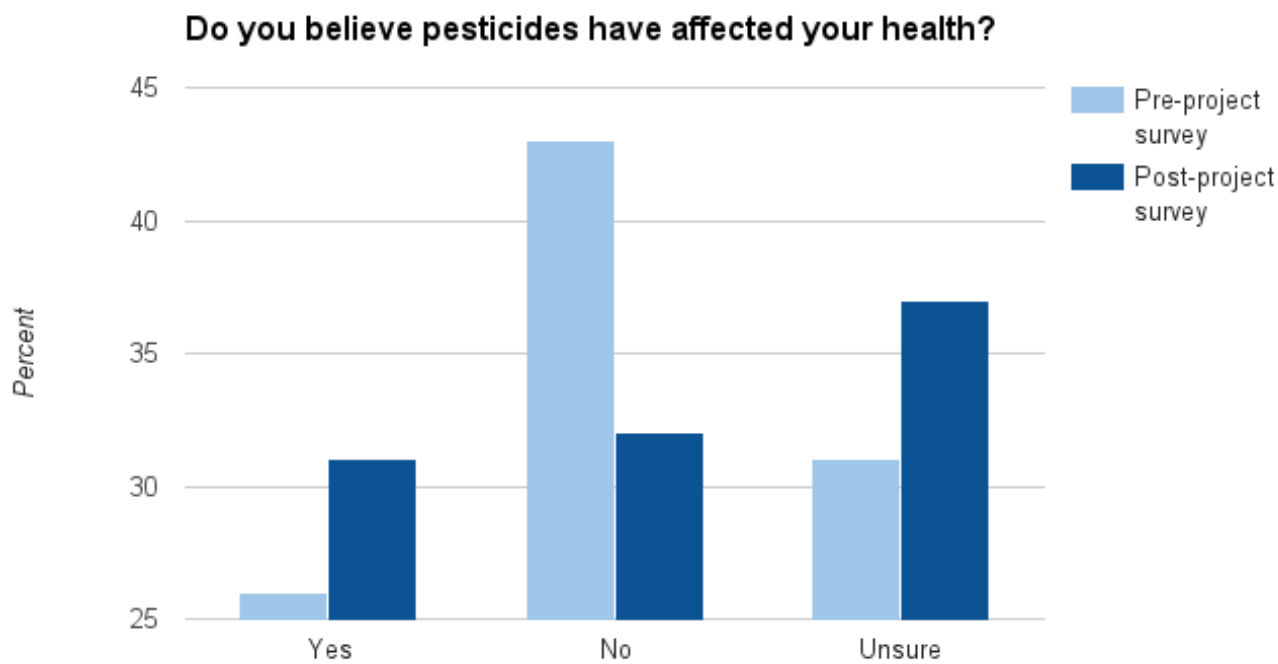


While there was a slight decrease in the proportion of respondents who reported that they had heard about pesticides in the past year (92 percent in pre-project survey; 86 percent in post-project survey), the percent of respondents who indicated they had heard about pesticides in the media increased. In the pre-project survey, 41 percent of respondents said they had heard about pesticides from the media in the last year; this percentage grew to 43 percent in the post surveys.

Of respondents who reported that they had heard about pesticides from the media, 35 percent reported this information had come via television and 32 percent selected the Ventura County Star.



We asked respondents in both the pre- and post-project surveys if they believe pesticides have affected their health. Although a majority still said no or were unsure, we saw an almost 5 percent (26 to 31 percent) rise in those who answered yes in the post-project survey.



Finally, there was a 1 percent increase in respondents (4 percent in pre-survey; 5 percent in post-survey) who said they had reported concerns to a government agency or official. While this is a small increase (and within the margin of error), it suggests that a small proportion of the community is taking action on the issue.

We wondered if there was a correlation between how close someone's home is to where crops are grown and his or her level of concern about pesticide exposure. Our survey findings suggest that respondents whose homes are closer to where crops are grown are a little more likely to have higher levels of concern about pesticide exposure. This correlation was slightly stronger in the post-survey.⁸

The pre-survey also found a slight correlation between respondents' level of concern about pesticide exposure and whether they try to limit their exposure – the more concerned people are about pesticide exposure, the more likely they are to report trying to limit their exposure. This correlation was strengthened in the post-survey.⁹

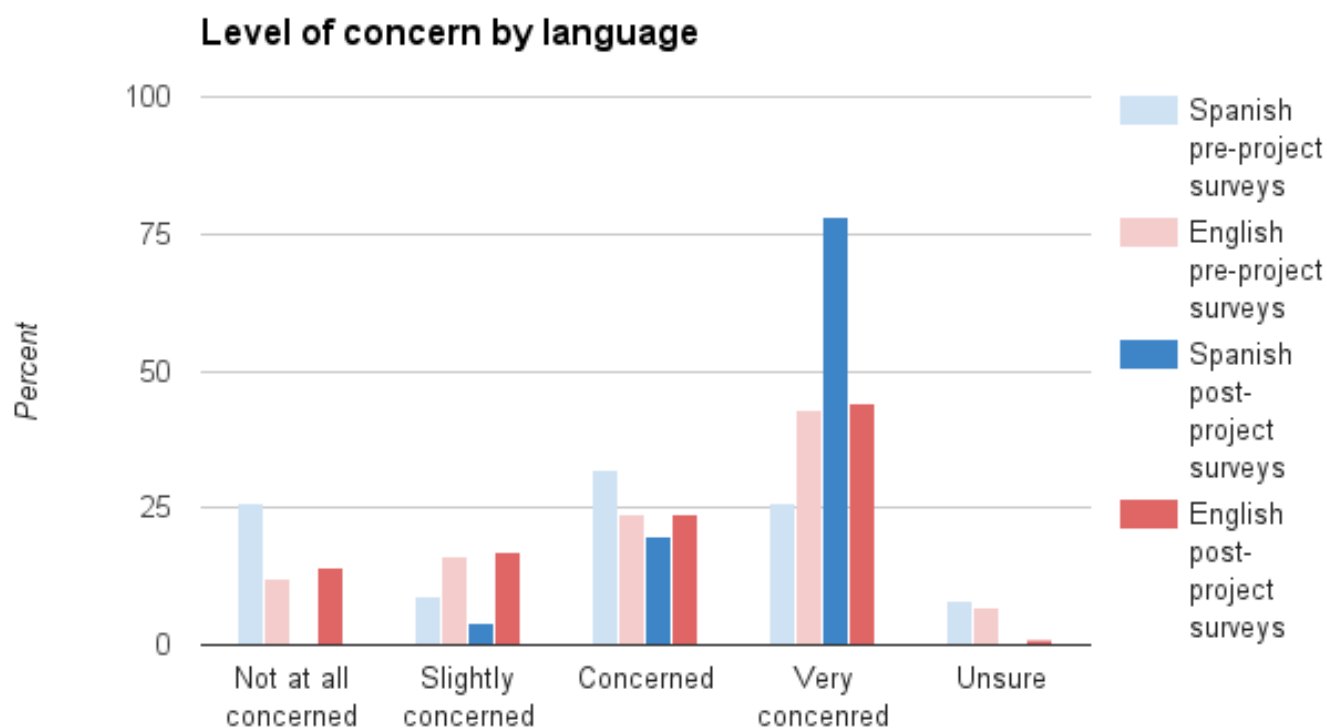
⁸ Pre-survey correlation: .144; post-survey correlation: .191. Both significant at the .05 level.

⁹ Pre survey correlation: .189; post-survey correlation: .238. Both significant at the .01 level.

When we analyzed responses based on the language in which a survey was completed (Spanish or English), we found one major difference. In the pre-survey, there was a slight negative correlation between language and level of concern about pesticide exposure: Spanish speakers were less likely to be concerned than were English speakers.¹⁰ In the post-survey, there was a significant shift and Spanish speakers became more likely to be very concerned about pesticide use than English speakers. In fact, in the post-survey, not a single Spanish-speaking respondent reported that they were "not at all concerned" with pesticide exposure.

CIR did not partner with national Spanish-language media or local Spanish media in Oxnard to distribute this story. When I conduct a scan of Spanish-language media, there are no stories that directly reference CIR's investigation or fumigant use in the strawberry industry in Oxnard. However, our news-clipping service only scans broadcast media that is closed captioned, meaning we are unable to search the majority of commercial radio broadcast and much television broadcast, so we do not know if local Spanish-language media picked up the story, and, if

¹⁰ Pre survey correlation: -.143; post-survey correlation: .230. Both significant at the .05 level.



so, which outlets.

Future research and conclusions

From this project, there is one lingering question ripe for future analysis: Though CIR translated the project into Spanish, we did not distribute this content locally with a Spanish-language partner. Nonetheless, we still saw the greatest shift in levels of concern among Spanish speakers in Oxnard, California. Future research could focus on answering the question: Under what conditions do English investigative projects reach Spanish-speaking audiences?

We think the investigation resonated among dominant Spanish speakers, many of whom work in agriculture, because the project's content was framed in a way that was not attacking the strawberry industry as a whole, so it did not directly threaten the livelihood of agricultural laborers. Instead, the story focused on the history of the strawberry industry and the failure of government to enforce regulations and use science to inform decision-making. However, because we do not

know where – if at all – the story was covered in Spanish-language media, we cannot be sure.

There are three major takeaways from this analysis, all of which are relevant for future investigative projects.

1. Engaging with an established, local stakeholder organization early was key to subsequent structural/policy change at the local level.

On-the-ground reporting allowed CIR reporters to build relationships with teachers who were part of the local teachers union. By hearing and understanding their concerns, reporters were able to include relevant information in reporting and provide valuable information to the community.

While teachers unions might not always be the relevant source and/or community institution, it is worth looking for power bases in communities that are not necessarily government or corporate entities. Furthermore, stakeholder groups that have an incentive to act might not be obvious; in this case, agricultural labor organizations, which

represent workers whose health could be at risk, would not speak with reporters. Engaging with institutions early in the reporting process allows for relationships and trust to build organically. Then, when a project starts, the likelihood increases that these groups will engage with the story and contact their broader networks.

2. Impact distribution – broad, national distribution of a story combined with localized distribution and engagement – resulted in increased awareness and concern about pesticide use in Oxnard.

Local media – especially the Ventura County Star – have credibility and a pre-existing relationship with the community. They proved to be important partners for reaching affected residents. This is a finding that has been replicated in each of our impact analyses and has been reinforced anecdotally through other CIR projects, peer media organizations and academic and other research.

Local engagement and face-to-face interactions at Rio Mesa High School and in the community with the “Alicia’s Miracle” play built relationships among CIR staff and community members. When paired with early engagement during the reporting process, this deepened relationships and trust among community players, CIR staff and CIR as an organization and news brand.

However, our engagement was not long enough, deep enough or broad enough in Oxnard to entice community members to respond to direct mailings. We hypothesize that the results of this mailing would have been better if it been conducted via another more recognized source of news and information, such as the Ventura County Star.

While it’s clear that local distribution and engagement were keys to catalyzing some on-the-ground change, state officials were unable to ignore the story completely, thanks to this project’s broad reach. The Department of Pesticide Regulation acknowledged the existence of the problem and suggested that they would look

into making changes, and in conjunction with pressure from local and county politicians, this government awareness shifted toward real structural change.

3. CIR’s continuous reporting on this story fed the long tail of impact.

CIR reporters and editors stuck with this story, staying abreast of local developments, meetings and calls for government investigation, and engaging with the public around this topic. By continuing to shine a light on this issue and providing relevant information consistently, CIR helped to keep this issue on the public – and political – agenda.

Appendix A



CIR, with support from the University of Southern California, is conducting a survey as part of a project in Oxnard, CA. This survey will take less than 5 minutes to complete.

The survey is anonymous and your name is not included as part of the survey.

Please return the survey in the pre-addressed, postage paid envelope.

1. In what industry do you work?
A) Service
B) Agriculture
C) Professional
D) Industrial
E) Unemployed
F) Other: _____
2. If you work in agriculture, do you apply pesticides?
A) Yes
B) No
C) Not sure
3. How concerned are you about you and/or your family members being exposed to pesticides?
1 - Not concerned 2 - A little concerned 3 - Concerned 4 - Very concerned 5 - Don't know
4. How close is your home to where crops are grown?
A) Directly next to
B) Less than a mile
C) Not close
D) Not sure
5. Do you have children?
A) Yes
B) No (skip to question 7)
6. If yes, how close is your children's school to where crops are grown?
A) Directly next to
B) Less than a mile
C) Not close
D) Not sure
E) My children are not in school
7. Have you ever received notification at school, home or at work that a pesticide application is planned?
A) Yes
B) No
C) Not sure
8. Have you or any of your family members been exposed to or smelled pesticides while at home, work or school?
A) Yes
B) No
C) Not sure
9. Have you heard about pesticides from any of the following? *Please select all that apply.*
A) Your school
B) Child or relative's school
C) Work
D) Government agency or official
E) Community group
F) Survey(s)
G) Media
H) Not sure
10. Do you try to limit you or your family's exposure to pesticides?
A) Yes
B) No (skip to question 12)
C) Not sure
11. If yes or not sure, please explain.

12. Do you believe pesticides have affected your health?

- A) Yes
- B) No (skip to question 14)
- C) Not sure

13. If yes or not sure, please explain.

14. Do you know what a fumigant is?

- A) Yes
- B) No
- C) Not sure

15. Have you ever reported concerns about pesticides to a government agency?

- A) Yes
- B) No (skip to question 17)
- C) Not sure

16. If yes, to which agency did you report it and what was the response?

17. How many people are in your household?

- | | |
|------|--------------|
| A) 1 | D) 4 |
| B) 2 | E) 5 or more |
| C) 3 | |

18. How do you get news and information about your local community?

- | | |
|--------------------------------|--------------------|
| A) Television | E) Community group |
| B) Radio | F) Newspaper |
| C) Online (computer or tablet) | G) Word of mouth |
| D) Mobile phone | H) Other: _____ |

19. What is your preferred language?

- | | |
|--------------|-----------------|
| A) Spanish | D) Mandarin |
| B) English | E) Other: _____ |
| C) Cantonese | |

20. What is your home zip code? _____

21. If you're interested in participating in follow-up surveys, please provide your street address:

22. How long have you lived at your current address?

- A) Less than one year
- B) 1-5 years
- C) More than 5 years

23. In what year were you born? _____

24. What is the highest level of school you completed?

- | | |
|----------------------|----------------------|
| A) Primary | D) Bachelor's degree |
| B) Secondary | E) Graduate degree |
| C) Associates degree | |



CIR, con el apoyo de la Universidad de California del Sur, está llevando a cabo una encuesta como parte de un proyecto en Oxnard, CA. Demorará menos de 5 minutos para completar la encuesta.

La encuesta es anónima y su nombre no será incluido.

Por favor, retorne la encuesta en el sobre pre-tratado, franqueo pagado.

1. ¿En que industria trabaja usted?
A) Servicio
B) Agricultura
C) Profesional
D) Industria
E) Desempleado/a
F) Otra: _____
2. Si trabaja usted en la agricultura, ¿aplica las pesticidas?
A) Sí
B) No
C) No estoy seguro/a
3. ¿Qué tan preocupado/a está usted acerca de que sus familiares o usted estén expuestos a los pesticidas?
1 – No estoy preocupado/a 2 – Poco preocupado/a 3 – Preocupado/a 4 – Muy preocupado/a 5 – No sé
4. ¿Qué tan cerca está su casa del lugar donde se cultivan las cosechas?
A) Justo al lado
B) Menos de un kilómetro
C) No está cerca
D) No estoy seguro/a
5. ¿Tiene usted hijos?
A) Sí
B) No
6. Si tiene hijos, ¿qué tan cerca está la escuela o colegio de sus hijos del lugar donde se cultivan las cosechas?
A) Justo al lado
B) Menos de un kilómetro
C) No está cerca
D) No estoy seguro/a
E) Mis hijos no van a la escuela o colegio
7. ¿Alguna vez ha recibido una notificación en la escuela, en casa o en el trabajo que se ha planeado la aplicación de pesticidas?
A) Sí
B) No
C) No estoy seguro/a
8. ¿Usted o algún miembro de su familia ha sido expuesto a pesticidas o oído pesticidas mientras en casa, el trabajo o la escuela?
A) Sí
B) No
C) No estoy seguro/a
9. ¿Ha oído algo acerca de cualquiera de los siguientes pesticidas? *Por favor seleccione todos los que correspondan.*
A) Su colegio/universidad
B) Escuela/colegio de un familiar
C) Trabajo
D) Agencia gubernamental u oficial
E) Grupo de la comunidad
F) Encuesta
G) Televisión/noticias/diario/periódico
H) No estoy seguro/a
10. ¿Trata de limitar la exposición de su familia a los pesticidas?
A) Sí
B) No (pase a la pregunta 12)
C) No estoy seguro/a
11. Si es "sí" o "no estoy seguro/a", por favor explique.

12. ¿Cree usted que los pesticidas han afectado a su salud?

- A) Sí
- B) No (pase a la pregunta 14)
- C) No estoy seguro/a

13. Si es "sí" o "no estoy seguro/a", por favor explique.

14. ¿Sabe lo que es un fumigante?

- A) Sí
- B) No
- C) No estoy seguro/a

15. ¿Alguna vez ha informado a una agencia del gobierno de sus preocupaciones sobre los pesticidas?

- A) Sí
- B) No (pase a la pregunta 17)
- C) No estoy seguro/a

16. Si es "sí" o "no estoy seguro/a", ¿en cuál agencia hizo la denuncia y cuál fue la respuesta?

17. ¿Cuántas personas viven en su hogar?

- | | |
|------|------------|
| A) 1 | D) 4 |
| B) 2 | E) 5 o más |
| C) 3 | |

18. ¿Cómo puede obtener noticias e información acerca de su comunidad local?

- | | |
|-------------------------------------|--------------------------|
| A) Televisión | E) Grupo de la comunidad |
| B) Radio | F) Diario/periódico |
| C) Internet (computadora o tableta) | G) Palabra de boca |
| D) Celular | H) Otro: _____ |

19. ¿Qué idioma prefiere?

- | | |
|-------------|----------------|
| A) Español | D) Mandarina |
| B) Inglés | E) Otro: _____ |
| C) Cantonés | |

20. ¿Cuál es su código postal? _____

21. Si está interesado/a en participar en la siguiente encuesta, por favor anote su dirección:

22. ¿Cuánto tiempo ha vivido en su dirección actual?

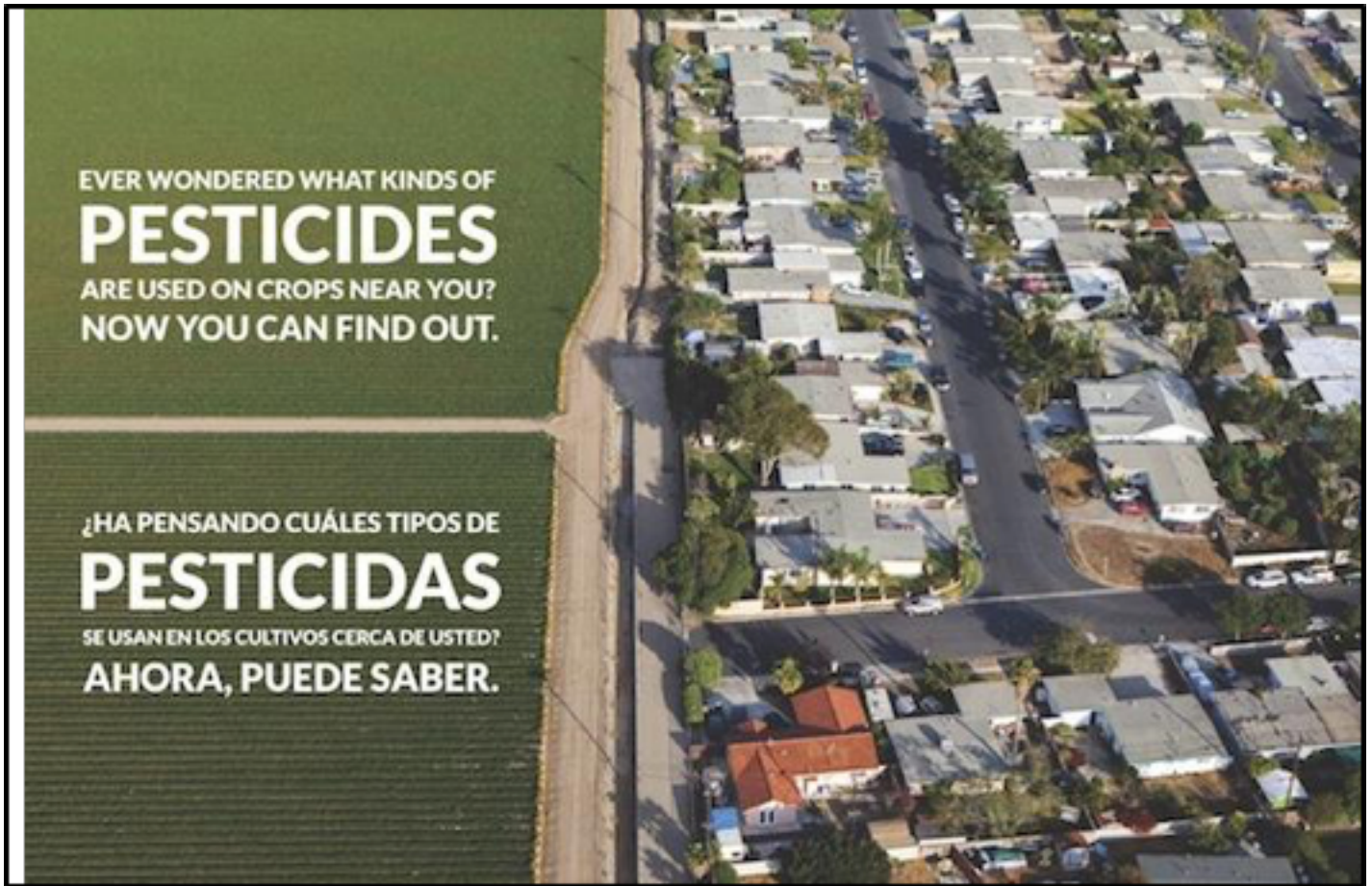
- A) Menos de un año
- B) 1-5 años
- C) Más de 5 años

23. ¿En qué año nació? _____

24. ¿Cuál es el nivel escolar más alto que ha alcanzado?

- | | |
|-------------------------|-------------------------|
| A) Primario | D) Título universitario |
| B) Secundario | E) Diploma de postgrado |
| C) Diploma de Associate | |

Appendix B



Based on your address, California records show that pesticides of public health concern have been applied in your area in recent years. The Center for Investigative Reporting has collected state pesticide data as part of a new story.

To get info on the kinds of pesticides that have been applied near you, text "pesticide" to 877-877. Your information is confidential and will not be shared.

Don't panic. This doesn't mean your health is at risk. Want to speak with our staff about pesticides or share your story? Email us at strawberries@cironline.org, or leave us a voicemail at 805-421-4827.

A base de su dirección, los datos de California muestran que pesticidas de preocupación para la salud pública han sido aplicados en la área de su residencia en los últimos años. El Centro de Reportajes Investigativos ha recolectado datos sobre el manejo de los pesticidas en California.

Para recibir información sobre las clases de pesticidas que se han usado cerca de usted, mándenos un texto con la palabra "pesticida" a 877-877. Su información es confidencial y no se compartirá.

¡Que no cunde el pánico! No es seguro que su salud esté en riesgo. ¿Quiere hablar con nuestros empleados sobre los pesticidas o quiere compartir su historia sobre este asunto? Mándenos un email a strawberries@cironline.org. O déjenos un mensaje por teléfono: 805-978-5350.

GET THE FULL STORY / LEA LA HISTORIA cironline.org/strawberries



Appendix C

CIR, with support from the University of Southern California, is conducting a survey as part of a project in Oxnard, CA. This survey will take less than 5 minutes to complete.

The survey is anonymous and your name is not included as part of the survey.

Please return the completed survey in the pre-addressed, postage paid envelope.

You can also take the survey at: <https://www.surveymonkey.com/r/OxnardHealth>

1. On a scale from 1 to 4, how concerned are you about you and/or your family members being exposed to pesticides?

- 1 - Not at all concerned
- 2 - A little concerned
- 3 - Concerned
- 4 - Very concerned
- 5 - Unsure

2. How close is your home to where crops are grown?

- A) Directly next to
- B) Less than a mile
- C) More than a mile
- D) Not sure

3. Do you have children, grandchildren, or other children for whom you are responsible living in your home?

- A) Yes
- B) No (skip to question 5)

4. If yes, how close is the children's school to where crops are grown?

- A) Directly next to
- B) Less than a mile
- C) Not closed
- D) Not sure
- E) My children are not in school

5. Have you ever received notification at home, work, or school that a pesticide application is planned?

- A) Yes
- B) No
- C) Not sure

6. In the last 12 months, have you heard about pesticides from any of the following? *Please select all that apply.*

- A) Your school
- B) Child or relative's school
- C) Work
- D) Government agency or official
- E) Community Group
- F) Survey(s)
- G) Media
- H) Not sure

7. If you heard about pesticide use through media, in which of the following? *(Please select all that apply.)*

- A) Radio
- B) TV
- C) Online - social media (twitter or Facebook)
- D) Online - news website
- E) Ventura County Star
- F) Other: _____

8. Do you try to limit your family's and/or your exposure to pesticides?

- A) Yes
- B) No (skip to question 12)
- C) Not sure

9. If yes or not sure, please explain.

10. Do you believe pesticides have affected your health?

- A) Yes
- B) No (skip to question 14)
- C) Not sure

11. If yes or not sure, please explain.

12. Have you ever reported concerns about pesticides to a public official or government agency?

- A) Yes
- B) No (skip to question 17)
- C) Not sure

13. If yes, to whom or which agency did you report it and what was the response?

14. In what industry do you work?

- | | |
|-----------------|-----------------|
| A) Service | D) Industrial |
| B) Agriculture | E) Unemployed |
| C) Professional | F) Other: _____ |

15. If you work in agriculture, do you apply pesticides?

- A) Yes
- B) No
- C) Not sure

16. How many people are in your household?

- | | |
|------|--------------|
| A) 1 | D) 4 |
| B) 2 | E) 5 or more |
| C) 3 | |

17. What is your home zip code? _____

18. How long have you lived at your current address?

- A) Less than one year
- B) 1-5 years
- C) More than 5 years

19. In what year were you born? _____

20. What is the highest level of school you completed?

- | | |
|-----------------------|----------------------|
| A) Primary | D) Bachelor's degree |
| B) Secondary | E) Graduate degree |
| C) Associate's degree | |

CIR, con el apoyo de la University of Southern California, está haciendo una encuesta como parte de un proyecto en Oxnard, CA. La encuesta le demorará menos de 5 minutos para completar. La encuesta es anónima, y su nombre no es incluido como parte de la encuesta. Por favor, devuelva la encuesta completa en el sobre pagado con dirección incluida. O, puede completar la encuesta aquí:
<https://www.surveymonkey.com/r/OxnardSalud>

1. ¿En una escala de 1 a 4, cuánto se preocupa que su familia y/o usted estén expuestos a los pesticidas?
 1 - No me preocupa
 2 - Me preocupa un poco
 3 - Me preocupa
 4 - Me preocupa mucho
 5 - No estoy seguro
2. ¿Que tan cerca está ubicado su casa desde donde se cultivan las cosechas?
 A) Justamente al lado
 B) Menos de un kilómetro
 C) Más de un kilómetro
 D) No estoy seguro/a
3. ¿Tiene usted hijos, nietos, u otros niños quienes viven en su hogar y para quienes es responsable?
 A) Sí
 B) No (Siga a la pregunta 5)
4. ¿Que tan cerca está ubicado la escuela de sus niños a donde se cultivan las cosechas?
 A) Justamente al lado
 B) Menos de un kilómetro
 C) Más de un kilómetro
 C) No estoy seguro/a
 E) Mis hijos no están en la escuela
5. ¿Ha recibido alguna notificación que está planificado una aplicación de pesticidas mientras estabas en la casa, el trabajo, o la escuela?
 A) Sí
 B) No
 C) No estoy seguro/a
6. ¿Durante los últimos 12 meses, ha escuchado algo sobre pesticidas de cualquiera de los siguientes? (*Por favor, escoja todos que apliquen.*)
 A) Mi colegio o universidad
 B) La escuela de un niño
 C) Mi trabajo
 D) Una agencia del gobierno o un oficial público
 E) Un grupo de la comunidad
 F) Una encuesta
 G) Los medios de comunicación
 H) No estoy seguro/a
7. ¿Si ha escuchado algo sobre pesticidas en los medios de comunicación, en cualquiera de los siguientes? (*Por favor, escoja todos que se apliquen.*)
 A) La radio
 B) TV
 C) Internet - redes sociales (Twitter o Facebook)
 D) Online - medio digital
 E) Ventura County Star o periódico
 F) Otro: _____
8. ¿Trata de limitar la exposición a los pesticidas de su familia o de si mismo/a?
 A) Sí
 B) No (Siga a la pregunta 10)
 C) No estoy seguro/a

9. Por favor, explique.

10. ¿Cree usted que los pesticidas han afectado a su salud?

- A) Sí
- B) No (Siga a la pregunta 12)
- C) Not sure

11. Por favor, explique.

12. ¿Alguna vez ha reportado preocupaciones sobre los pesticidas a un oficial público o una agencia del gobierno?

- A) Sí
- B) No (Siga a la pregunta 14)
- C) No estoy seguro/a

13. ¿A cuál oficial o agencia reportó sus preocupaciones y que fue la respuesta?

14. ¿En que industria trabaja usted?

- | | |
|----------------|------------------|
| A) Servicio | D) Industria |
| B) Agricultura | E) Desempleado/a |
| C) Profesional | F) Otra: _____ |

15. ¿Si trabaja usted, aplica pesticidas?

- A) Sí
- B) No
- C) No estoy seguro/a

16. ¿Cuántas personas viven en su hogar?

- | | |
|------|------------|
| A) 1 | D) 4 |
| B) 2 | E) 5 o más |
| C) 3 | |

17. ¿Qué es el código postal de su casa? _____

18. ¿Cuántos años ha vivido usted en su casa?

- A) Menos de un año
- B) 1-5 años
- C) Más de 5 años

19. ¿En que año nació? _____

20. ¿Cuál es el nivel más alto de escuela que usted ha cumplido?

- | | |
|---------------|-----------------|
| A) Primaria | D) Bachillerato |
| B) Secundaria | E) Posgrado |
| C) Asociado | |