

UC IRVINE | ENVIRONMENTAL INJUSTICE | FALL 2019

# INGLEWOOD

SLOW DISASTER CASE STUDY | GROUP 6

Authors: Melissa Del Castillo, Dulce S. Garfias, Bethany Lyn Hatsios, Vahe Khachikyan, Dominique Ariel Kim, Jawara Li, Katherine Ariela Lopez Ancheta, Abigail Jolie Mesel, Apisaloma Siufua, Paul Chen Nguyen Trinh

[ANTHRO 25A: Environmental Injustice](#)

Instructor: Prof. Dr. Kim Fortun  
Department of Cultural Anthropology

**Graduate Teaching Associates:**

Kaitlyn Rabach  
Tim Schütz

**Undergraduate Teaching Associates**

Nina Parshekoftch  
Lafayette Pierre White

University of California Irvine, Fall 2019

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**Fig. 1:** *Inglewood is located in California.* Image. Wikipedia. November 2, 2019. Accessed November 7, 2019. [https://en.wikipedia.org/wiki/Inglewood,\\_California](https://en.wikipedia.org/wiki/Inglewood,_California).

**1. What is the setting of this case? [Dulce Garfias]**

The city of Inglewood is located in Southern California, and is a part of the South Bay region in the Los Angeles County metropolitan area. Geographically, Inglewood is coastal and only a couple of miles away from the ocean taking up about 9.07 square miles of land (Fig. 2). As of April 1st 2010, the census concluded that the population of Inglewood was 109,672 but during an estimate done on July 1st 2018 the estimated population now stands at 109,419. Out of those estimated 109,419 residents about 52.2% are women and the remaining 47.8% are males. The residents of Inglewood are made up of whites, African-Americans, American Indian, Asian, Hispanics, and a small percentage of Native Hawaiians.

INGLEWOOD: EPA EJSCREEN COMMUNITY PARAMETERS
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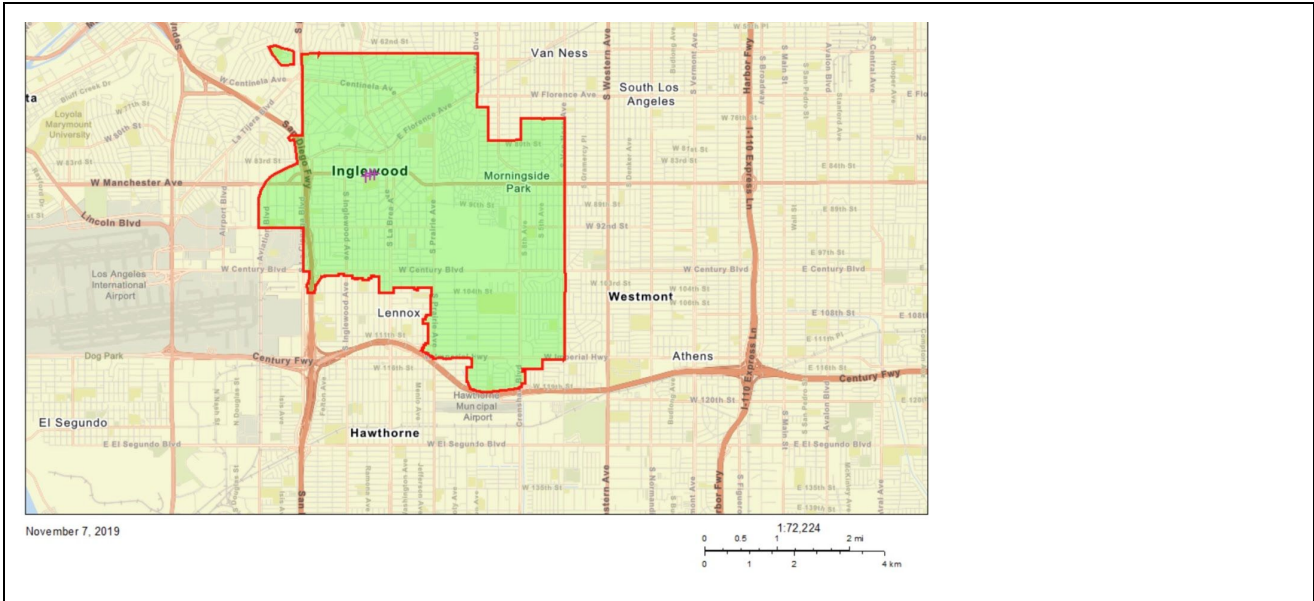


Fig 2: Selected area for the City of Inglewood. EPA EJScreen Report, *City of Inglewood*, 2019. Retrieved November 6, 2019. Screenshot taken by author.

However, the population of Inglewood is mostly dominated by African Americans who make up 41.8% and hispanics who make up 51.4% (US Census 2019). Inglewood was first incorporated back in February 14, 1908 and has a very long history of African Americans and Hispanics that migrated to the city years ago in search of jobs and many still reside there today (Sonksen 2018).

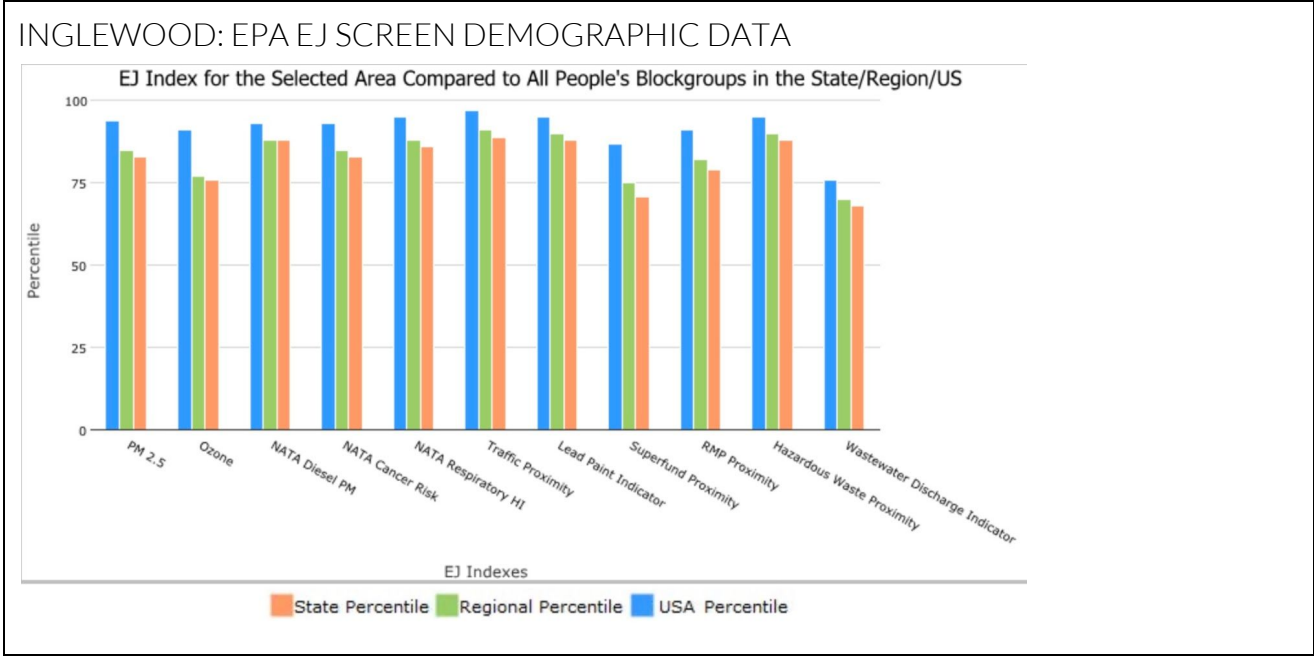


Fig 3: Demographic indicators for Inglewood. EPA EJScreen Report, *City of Inglewood*, 2019.

Retrieved November 6, 2019. Screenshot taken by author.

Due to how densely populated the city of Inglewood is by minorities the median income as of 2017 is only at about \$46,389, with the median gross rent at about \$1,186 and the median house value is \$389,600 (CityTownInfo 2019). It has been reported that about 20% of the residents of Inglewood live below the poverty level. According to the generated EPA EJ Screen Report, Inglewood ranks above the State Percentile in all of the indicators and above the 75th percentile for 9 out of the 11 indicators such as PM 2.5, NATA Cancer Risk, NATA Diesel PM, and Wastewater etc. (Fig. 3).

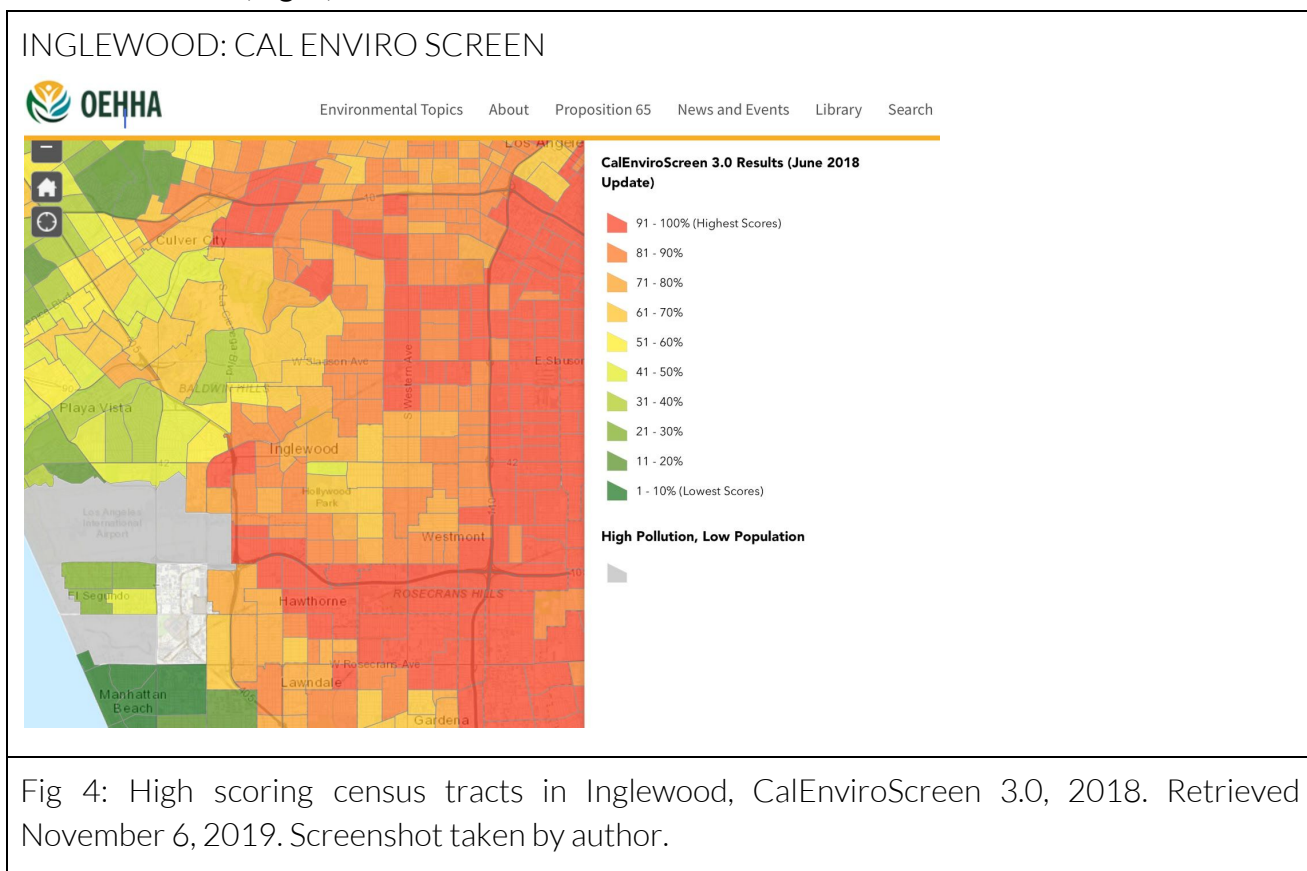


Fig 4: High scoring census tracts in Inglewood, CalEnviroScreen 3.0, 2018. Retrieved November 6, 2019. Screenshot taken by author.

The EPA EJ Screen Report alongside the CalEnviro Screen Report demonstrate the high levels of pollution the residents of Inglewood are exposed to. Inglewood has extremely high scores of pollution ranging from 41-100% within the city limits (Fig.4). With the high amount of minorities living in Inglewood, the high levels of pollution are not much of a surprise as Inglewood is also located at close proximity to the Inglewood Oil Field and LAX that are known to be the cause of such pollution. Together, the EPA EJ Screen and CalEnviro Reports demonstrate how much those pollutants impact Inglewood and its residents.

**2. What environmental threats contribute to slow disasters in this setting? What data is available to characterize these threats posed by slow disasters in the community?  
[Bethany Hatsios]**

Nestled between two freeways, settled right under the flight path of Los Angeles International Airport (LAX), and spattered with oil and gas wells, Inglewood faces significant environmental threats, the most intense being air pollution and exposure to toxic emissions.

Given that Central Inglewood is only 3.8 miles away, the most significant source of these air pollutants is from LAX and its nearly 40 to 60 jets that take off and land every hour during the busiest times at LAX. High levels of harmful particles have been found in the air up to 10 miles from the airport in every direction, and takeoffs and landings of planes in LAX are the biggest contributors to these harmful particles. The amount of particles they release in the air is a lot higher, and spread to a larger distance than previously thought. After some research, it was discovered that these particles travel over a 23-square-mile area affecting Lennox, El Segundo, Inglewood, and other parts of Los Angeles (Barboza 2014). Researchers from the USC Keck School of Medicine sampled the air up to 23 miles from LAX and found that particle concentrations were twice the normal levels over a 23-square-mile area, five times higher than normal over nine square miles, and nearly 10 times higher than normal at just two miles, equivalent to levels found in 174 to 491 miles of LA freeway traffic. These studies also found pollutants such as nitrogen oxides and small “ultrafine” particles that are attributed to airplane emissions which form from condensation of hot exhaust vapors. and are an issue because they deposit deeply into the lungs and can enter the bloodstream causing blocked arteries and other health conditions, especially for people with asthma or other existing cardiac and lung conditions. In addition to ultrafine particles, researchers found similarly high levels of other emissions, including smog-forming gases called nitrogen oxides and black carbon, a major component of soot found in engine exhaust (CBSLA 2014). These particles can lead to a slow disaster since they affect people's health slowly and the long term effects can be devastating. These particles traveling through the Inglewood air can go deep inside the lungs and make their way into the bloodstream, heart, brain, and other organs causing a lot of problems (Barboza 2014).

The second significant source of air pollution and toxic emissions are the active oil and gas wells centered in northern Inglewood (Fig. 5). Within Inglewood there are 129 active oil and gas wells (County of Los Angeles Public Health n.d.). The wells release toxic chemicals such as methane, benzene, toluene, ethylbenzene, nitrogen oxides, and fine particulate matter which can cause diseases such as mild respiratory illnesses, birth defects, increased rates of heart disease and cancer when inhaled (Levin 2019). The drilling in and around neighborhoods

exposes residents to these toxic chemicals, smog forming gases, and water pollution.



Fig 5: View of active oil and gas wells in and around Inglewood. California Shale Viewer. n.d. Accessed November 9, 2019. <http://maps.fractracker.org/latest/?appid=57ecf5feebea8428f80a749ec50921ad6>. Screenshot taken by author.

The toxic particles that contribute to the overall air pollution in Inglewood and Los Angeles County is found to exceed the acceptable amount of days within a year that experience high levels of particle pollution (Fig. 6) In effect, the level of burden within Los Angeles County of childhood asthma due to NO<sub>2</sub> is significantly higher than nearby levels in California (Fig. 7).



Fig 6: Graph of the number of days within a year that experience harmful high levels of particle pollution and exposure. Los Angeles. n.d. Accessed November 9, 2019. <https://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/california/los-angeles.html>. Screenshot taken by author.

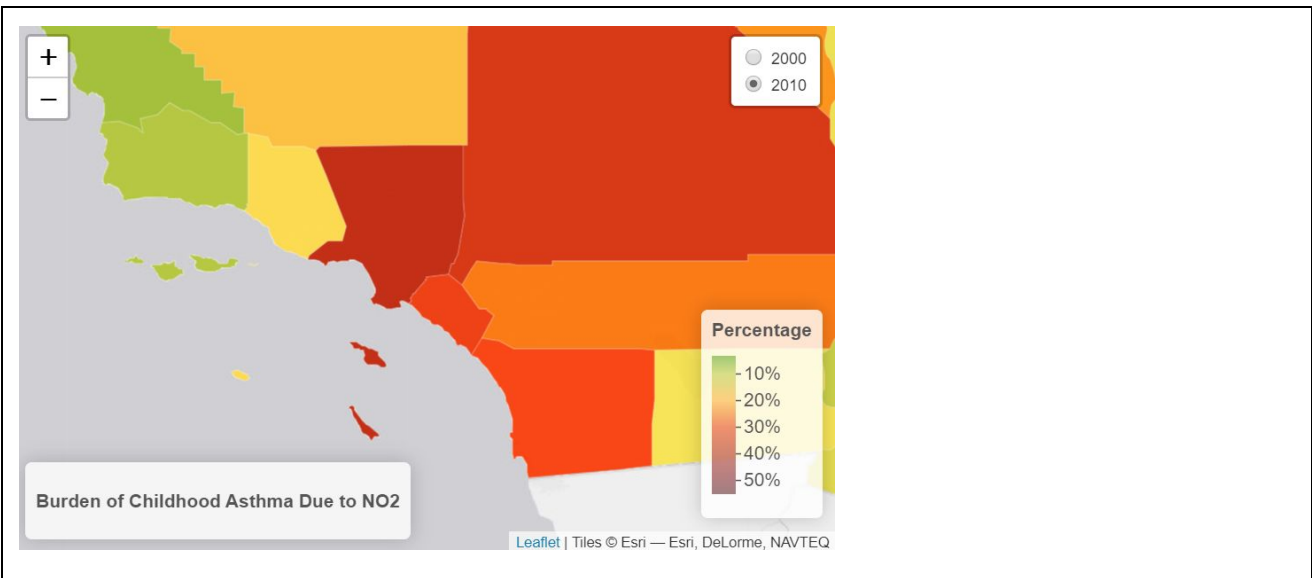


Fig 7: Map of percentages of childhood asthma burdens to to NO2 within Los Angeles County. Khreis, Haneen. n.d. Where Cars and Trucks Cause the Most Childhood Asthma. Accessed November 9, 2019. <https://www.citylab.com/environment/2019/04/mapping-where-traffic-air-pollution-hurts-children-most/587170/>. Screenshot taken by author.



An additional environmental threat from LAX are the dangerous levels of noise pollution that residents around the airport are exposed to daily. The City of Inglewood has been working with airport officials, and with the airport's executive director, Lydia Kennard, to begin negotiations to reform noise mitigation standards and investigate the health effects of the noise and emissions from the aircrafts and motor vehicles on the community. Los Angeles World Airports (LAWA) has been requested to assist the city in retesting homes in Carlton Square for adequate noise mitigation measures, and if they are not adequate, LAWA is asked to fund the retrofitting of these homes with better noise mitigation features. Furthermore, the city has requested that the airport reduce the noise mitigation threshold level from 65 dB CNEL to 60 dB CNEL, which will increase the number of affected residents eligible for this compensation. A proposed health study for the city to be conducted by the Environmental Protection Agency, Federal Aviation Administration, Los Angeles World Airports, and the South Coast Air Quality Management District is also currently underway. (Butts n.d.)

Another environmental threat faced by Inglewood residents is water pollution. Inglewood treats water from its wells and also purchases water from the West Basin Municipal Water District, however, in a California Water Quality Report done by Epic Water Filters, Inglewood exceeds health guidelines for certain contaminants in its drinking water including arsenic, radiological contaminants, bromate, hexavalent chromium, and trihalomethanes. Arsenic, radiological contamination, hexavalent chromium, and trihalomethanes are linked with developing cancer, whereas bromate is linked with poor kidney health. Inglewood also uses recycled water, which is unsafe for consumption and hygienic use, to irrigate parks, and clean streets and sewer lines (Epic Water Filters 2019)

An environmental threat within Inglewood that is often unnoticed is exposure to harmful lead paint and its effects on residents' health. Located southwest of Los Angeles in the map, Inglewood has disproportionately high levels of exposure to lead poisoning than the entirety of Los Angeles County (Fig. 8). According to the City of Inglewood, lead exposure can harm young children and even infants before they are born. Children that seem healthy can have high levels of lead found in their bodies. Lead can enter an individual's body through inhalation and ingestion of dust or soil and paint chips that contain lead. There are various ways to reduce the risks of harmful exposure to lead, however removing lead-based paint improperly can worsen the risk of danger. The danger of lead poisoning is nearly ubiquitous as many homes and apartments built before 1978 used lead-based paint. If not taken care of correctly, lead from paint, chips, and dust can pose serious health hazards. In response to this danger the City of Inglewood has begun implementing lead hazard control activities through homebuyer and housing rehabilitation programs (City of Inglewood 2019). However, the risk can never be

completely removed, as the negative health effects of lead poisoning are irreversible and the residents have been exposed for their entire lifetimes.

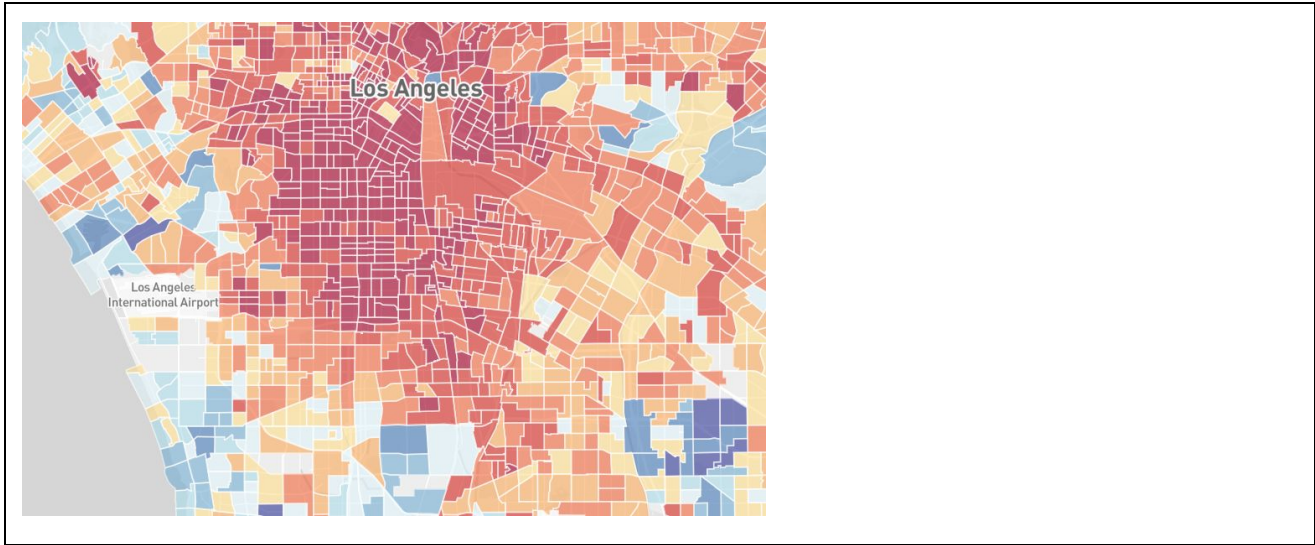


Fig 8: Map of levels of lead exposure measured within Los Angeles County, Frostenson, Sarah, Sarah Kliff on April 6, 2016, and 8:50 a m ET. n.d. Where Is the Lead Exposure Risk in Your Community? Accessed November 9, 2019. <http://www.vox.com/a/lead-exposure-risk-map>. Screenshot taken by author.

Not only do these sources of direct environmental threats harm the residents of Inglewood, but they also worsen the overarching problem of the behaviors contributing to climate change. These conditions are especially perfect for a slow disaster as many residents are not aware of the extent of the dangers they are in and likely won't know until it has irreversibly affected their health.

### **3. What factors -- social, cultural, political, technological, ecological -- contribute to environmental health vulnerability and injustice in this setting? [Katherine Lopez]**

The population in Inglewood CA is 109,419 as of 2018 and the demographics show that there are mainly low-income minorities living there. More than 90% of Inglewood residents are part of minority groups (Fig. 9), and 20% of Inglewood residents are living in poverty (U.S. Census Bureau 2018). Additionally, the percentage of Inglewood residents with a college degree is about 19.2% and 74.4% have a high school diploma (Fig. 10) (U.S. Census 2019). The rent prices in Inglewood are high, an average of \$ 1,186 for a same place so the average income subtracting rent in the city is about \$446 which is a very small amount (Fig. 11) (U.S. Census 2019). Based on this information, low socioeconomic status, high rent prices, low education levels and a population consisted by minority groups, are the factors contributing to the environmental health vulnerability of residents of Inglewood. In addition, in the city of Inglewood, there are more sources affecting the health of the population; such as, the environmental racism created by the oil fields and the actual industries that are polluting the areas around the city (Fig. 12). Inglewood is littered with many industries that pollute the area and cause major health problems. An example of an environmental justice issue is the Inglewood oil field. There are several schools and childhood facilities in the area and nearly a million people within a five-mile radius. According to the most recent Census data the area is predominantly African-American (Levin 2019). The National Center for Environmental Assessment's research, found that black people are exposed to about 1.5 times more particulate matter than white people, Hispanics had about 1.2 times the exposure of non-Hispanic whites and people in poverty had about 1.3 times more exposure than people above poverty (Newkirk 2018). This illustrates a prime example of environmental racism. Another factor that can be seen is the ecological factor in which cities like Inglewood are being built too close to the communities. Places such as the LAX airport pose a great threat to the residents of any nearby cities. The LAX airport, which produces pollution through the jets exhaust have been found to affect "communities up to 10 miles east of the runways" with so much pollution that it would take between 20-50% of the highways to generate the same levels of pollution (Weikel 2014). As stated previously, the LAX airport is one of the main sources of pollution in the LA area. Technology places a huge role in recent issues revolving climate change through the creation of forms of transportation and the industrial revolution that brought upon machines and factories. Technological improvements like airplanes that constantly release airplane exhaust with harmful chemicals harm the people of Inglewood in various ways. Lastly, when addressing environmental threats around a community; it is important to take into considerations the social aspects of the community that may be

inflicting with their health outcomes. For instance, the structure of the city can play a big role in the determination of environmental threats. For example, if the city has a high rate for obesity and its surrounding does not provide easy access to whole food and healthy eating; then, the structure of environment can be considered a high risk for obesity. Housing affordability in Inglewood is another source that contributes to the vulnerability of this setting. According to the report “City and Community Health Profiles: Inglewood”, it informs that high cost housing impacts health in a negative way by adding stress to the individuals of the community and also by limiting where their income goes to (Los Angeles County Department of Public Health 2018). The report also states that “Living in poor quality housing can increase exposure to environmental hazards, such as lead, molds, and cockroaches. Lead exposure during childhood is a particular concern as it can adversely impact brain development” (Los Angeles County Department of Public Health 2018). In conclusion, all these factors overlap with one another and work together to contribute to the environmental health vulnerability and injustice cities all over LA face.

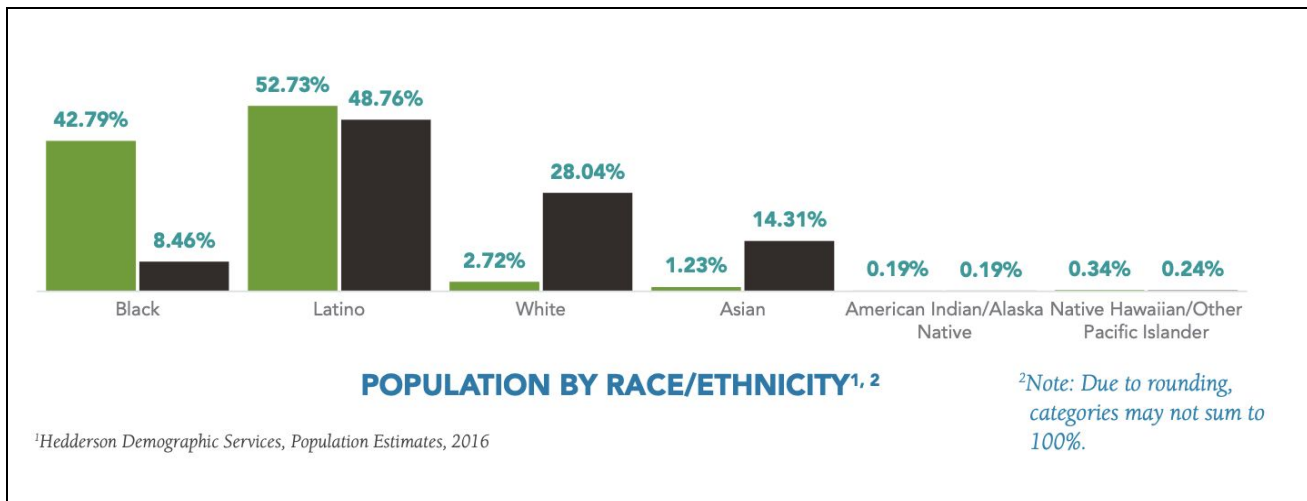


Fig. 9: “Race/Ethnicity in Inglewood”

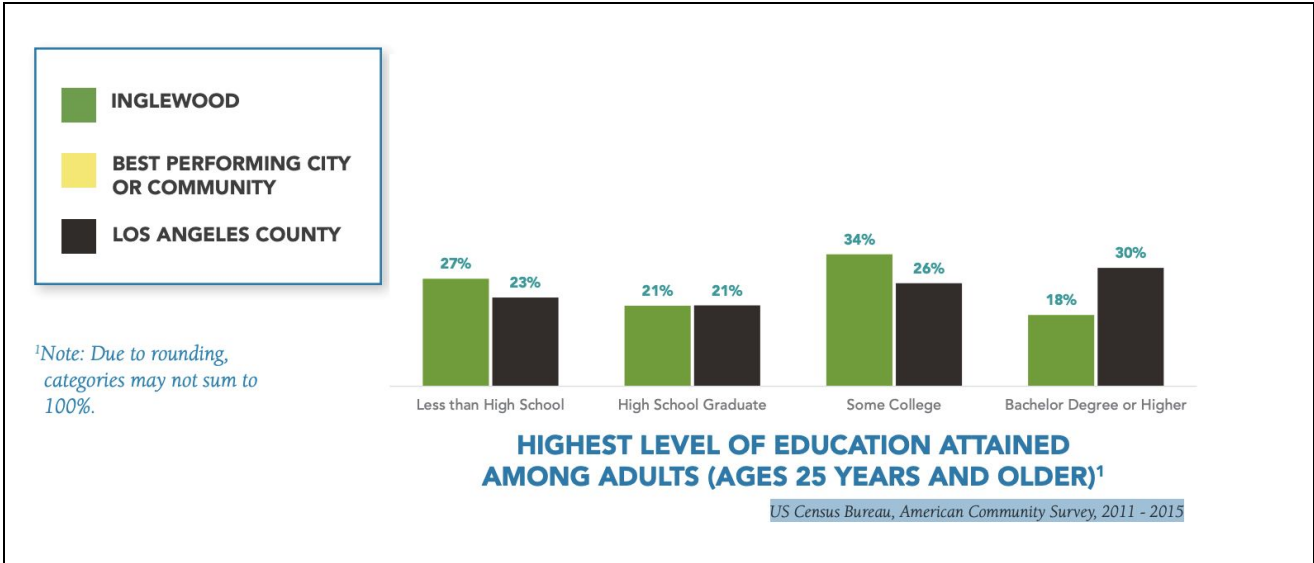


Fig. 10: “Levels of education in the city of Inglewood”

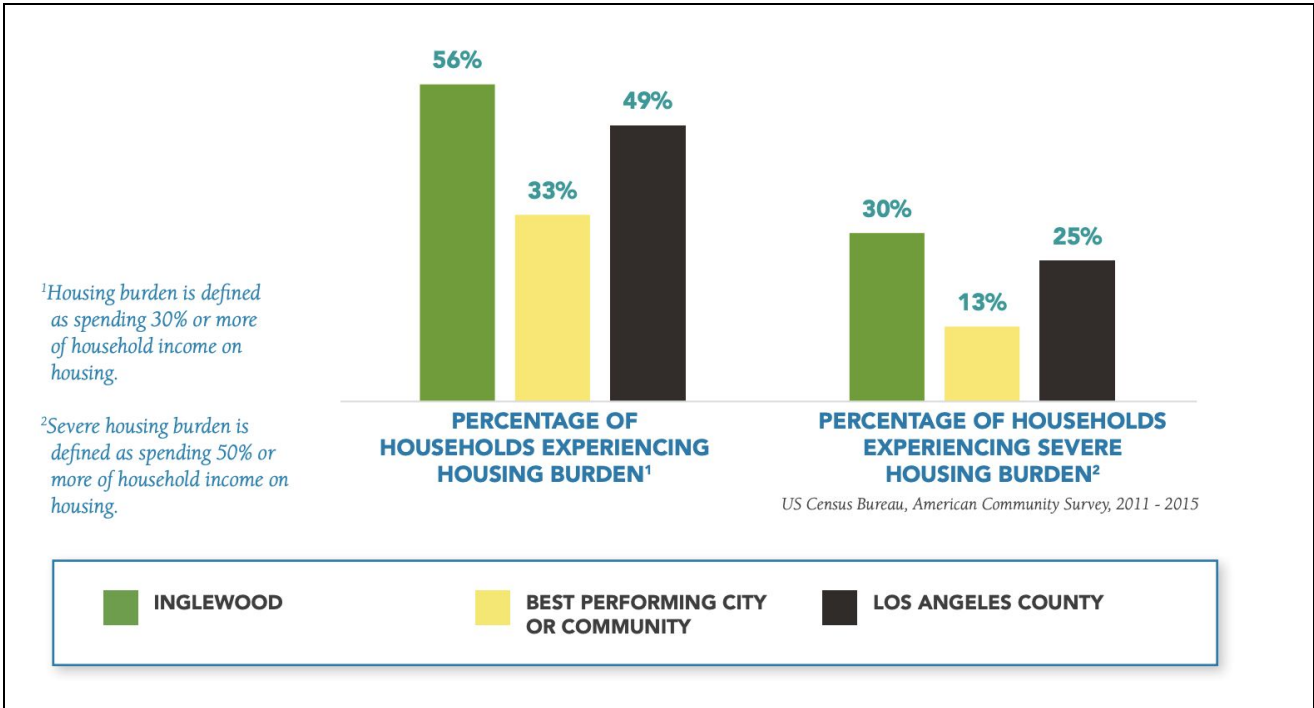


Fig. 11: caption “Housing burden among the population”



Fig. 12: "Inglewood oil field"

#### **4. Who are the stakeholders, what are their characteristics, and what are their perceptions of the problems? [Melissa Del Castillo]**

There are many stakeholders involved with the Los Angeles International Airport, the most important ones include residents near the airport, Airport officials, healthcare providers, environmental protection agency, and companies near the airport. The residents of Inglewood are exposed to dangerous air and traffic due to the airport and therefore are very impacted by the situation. The residents of Inglewood are negatively affected by the airport since the fumes released by airplanes are incredibly and dangerous. Inglewood is about 3.8 miles away from the airport and research has proven that planes release most toxins up to 10 miles after they take off which means the Inglewood residents are inhaling these toxins (Barboza 2014). Researchers have found that the particle levels in Inglewood air is about 6 to 8 times higher than normal cities in LA, sometimes these readings are up to 10 times higher than cities without a nearby airport (Barboza 2014). The particles airplanes release into the air are big in comparison to others in the air and they can go deep into the lungs and then travel into the bloodstream and other organs causing serious health problems (Barboza 2014). Airport officials are also stakeholders in this case since they benefit from the profits made from the travel that causes the pollution. In this case, the Los Angeles World Airports owns and operates the Los Angeles International Airport and the Van Nuys Airport; these airports make the company the most revenue from its aircraft landing fees, lease fees, concession fees, and parking fees (Los Angeles World Airports, n.d). The owners of the airport are big stakeholders in this case since they make a lot of money from the airport and benefit greatly from it running smoothly. They benefit from it most when it runs well without them having to put a lot of money in to it, the more they can profit from it the better. As all companies, they try to make as much money as possible without thinking about the way people in the area are affected by the harmful plane emissions. Health care providers are also greatly affected by the airport and its pollution. Doctors get more patients due to the bad air quality causing respiratory and other health problems, the more patients they get the more money they charge. For doctors, medical offices, and pharmacies, it's affecting them in a positive way. Doctors and medical offices get more patients and then pharmacy fulfill more prescriptions; they all end up making more money from the health problems air pollution causes in the Inglewood citizens. The Environmental Protection Agency (EPA) is also affected by the pollution caused by airplanes. The EPA has been under attack by a lot of environmental organizations for not setting better rules to control the standard for ultrafine particles released in the air for airplanes, like the ones other countries have (Barboza 2014). The EPA has done and published research about

airplane emissions but not much progress has been made since it is a government agency and it takes a lot of reviewing and fighting for new laws to go through. The last of the important stakeholders in this case are businesses near the airport, they benefit from the airport since it brings people in constantly. For example, near Inglewood there are many stadiums and arenas that benefit from the airport being so close and all the visitors it brings. Some of these include: The Forum, SoFi arena, LA Memorial Coliseum, and the LA Rams stadium is also being built there (Fig.13).

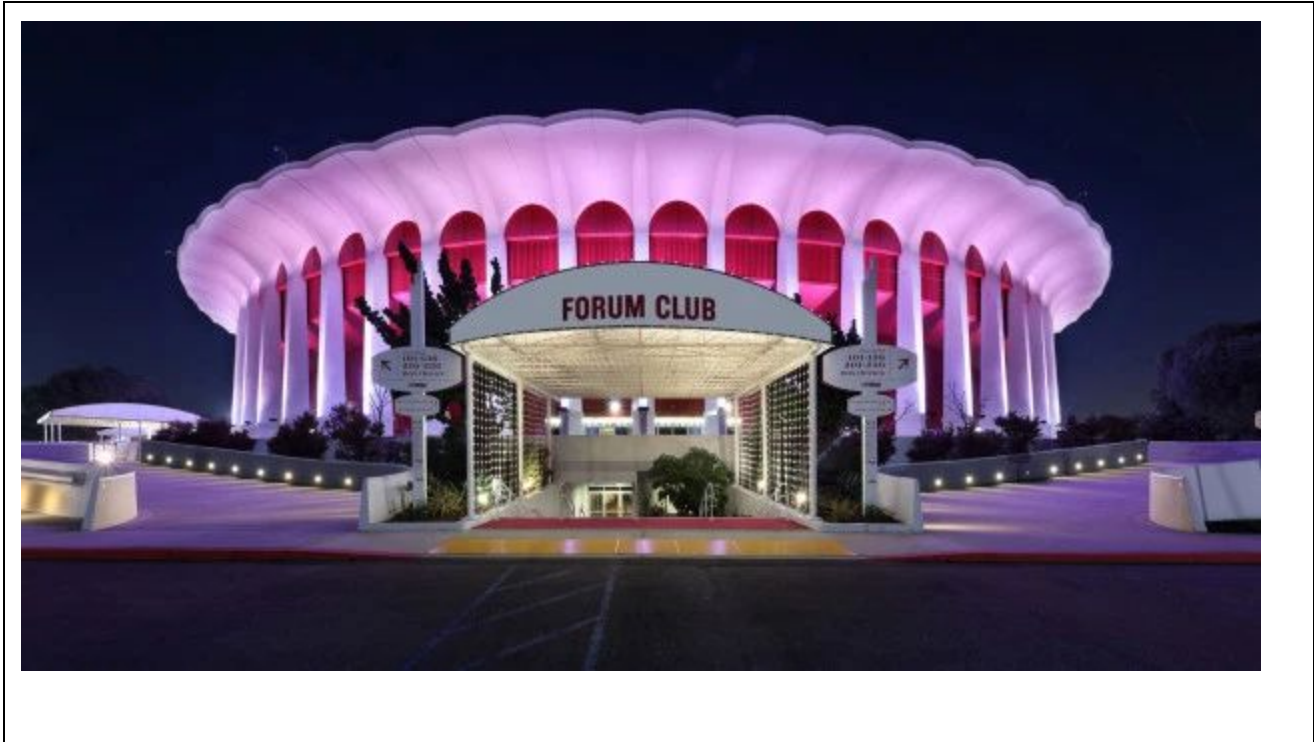


Fig. 13: This image is of one of the stakeholders in the case, the Forum, a huge arena near Inglewood that benefits greatly from the airport and the people it brings into the city  
Screenshot taken by Michel Guyon

**5. What have different stakeholder groups done (or not done) in response to the problems in this case? [Apisaloma Siufua]**

Stakeholders are groups that are involved in the issue that is being addressed, so the matter of Inglewood's environmental state any group or person that is involved with this issue would be a stakeholder. Firstly let us take a look at how the City of Inglewood is addressing the environmental issues of their city. The Environmental Services Division in The Public Works Department deals with the policies and programs in dealing with solid wastes, sanitation, environmental compliances, etc. According to the city of Inglewood's website of the



Environmental Services Divisions, most of the programs and issues they are primarily dealing with are waste. To help resolve this issue there are three Recycling Programs that Inglewood uses: Used Oil Recycling, Plastic Bag Recycling, and Opt-Out of Receiving Junk Mail at Home. Oil Recycling both saves people money and helps our environment reduce the possible solution in our soil and water. According to Fig.14, you can see that there are numerous options for used oil certified collection centers in Inglewood. The Recycling of plastic bags proves to demonstrate that it is really good for the environment because it saves money and reduces the usage of other items. Good use of recycling plastic is where it can be used to make composite lumber for making decks, benches, and playground sets, meanwhile reducing the number of trees being used. Recycled plastic film can be made into new bags, containers, crates, and pipes, so in other words what they were already used for, to begin with, but new. The other program the Environmental Services Division of Inglewood is about is opting out of receiving Junk Mail at Home. This program's primary purpose is to reduce paper usage to save trees, spare your mailbox and your time.

Airports are another stakeholder that created its own Sound Insulation Program specifically to their own communities to reduce noise pollution in communities near airports. Although LAX Sound Insulation Program left many poor neighborhoods in Inglewood out of the home soundproof program. In response to this, an LA Times senior staff writer, Doug Smith, investigated this matter. According to Mr.Smith's explanation of the soundproof program on May 23rd, 2019, many poor neighborhoods are left out due to the zoning laws of those communities since they no longer have them classified as residential zones rather they are classified as industrial zones.

Another Stakeholder, The TreePeople, an environmental nonprofit organization that helps communities engage in taking better care of their environment. The Greening Plan's main priorities were Urban Greening, Food and Urban Agriculture, Water, Transportation, Air Quality, Land Use, Energy and Waste, and Community Engagement. The TreePeople's actions to carry out the Greening Plans are to increase tree canopy cover, building community gardens, and capturing and conserving rainwater. About eight months ago the TreePeople announced the completion of the Inglewood and Lennox Greening Plan. Why are the communities that are classified as industrial zones but are actually residential apartments not being included in the soundproofing program or being switched to residential zones?

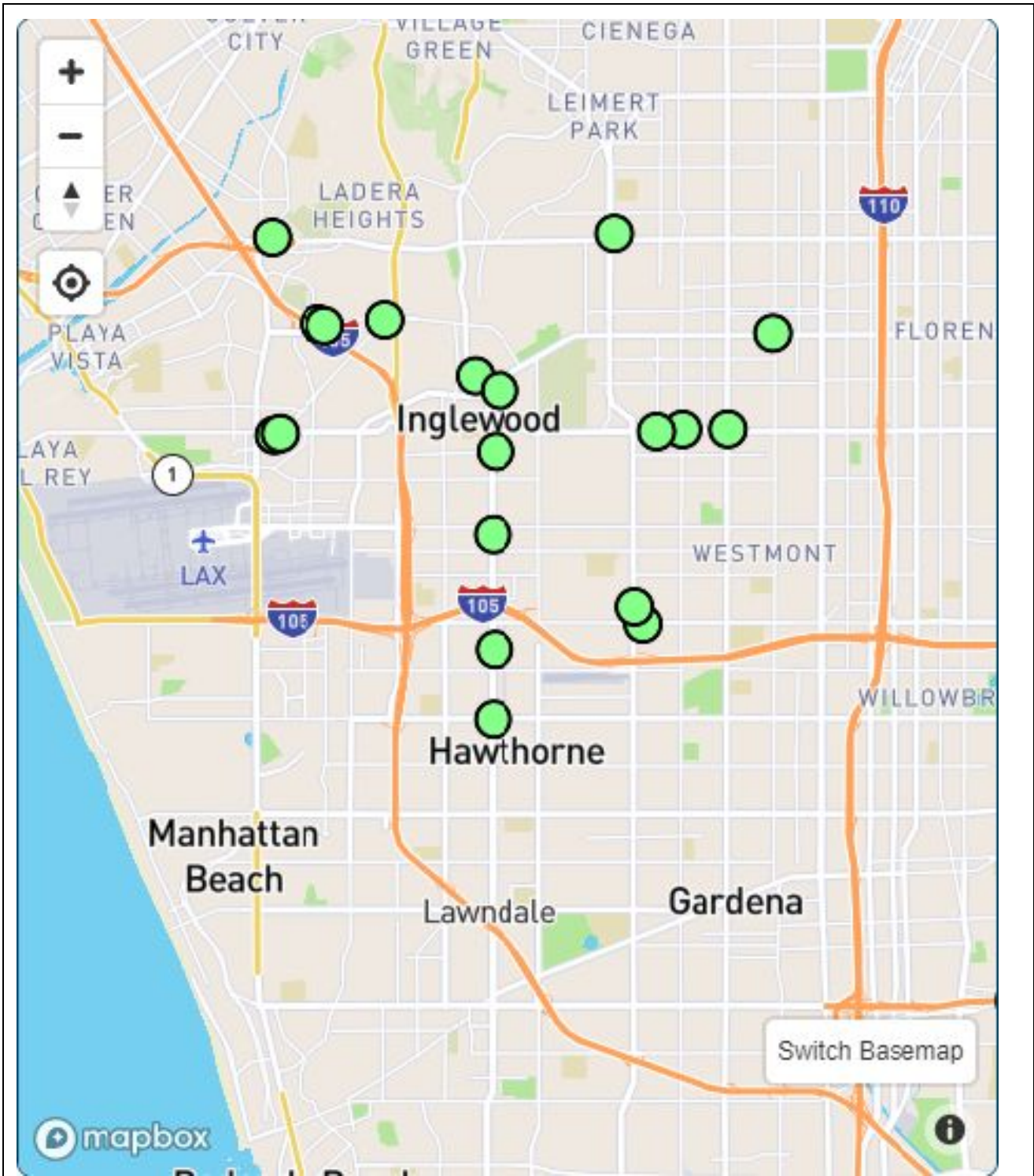


Fig 14: A map of Inglewood's Used Oil Certified Collection Centers

**6. How have big media outlets and environmental organizations covered environmental problems related to worse case scenarios in this setting? [Jawara Li]**

Through some research, we were able to find a vast array of media outlets covering the air pollution being emitted from the Los Angeles International Airport (LAX). We found two well published articles that address how LAX is a significant source of air pollution for neighboring communities. Inglewood is located about 3 miles away from the LAX airport which makes the community very vulnerable to the pollution being emitted by the planes coming in and out of LAX.

In the article titled “Planes’ exhaust could be harming communities up to 10 miles from LAX” published by the “LA Times” details the high levels of potentially harmful exhaust particles from jets and its effects on health and the environment. According to an air quality study report, it found that takeoffs and landings at LAX are a major source of ultrafine particles and are polluting over a larger area than previously thought (Barboza 2014). Studies have found concentrations of the wind-driven particles over a 23-square-mile area which raises health concerns in the communities that are affected (Barboza 2014). The author explains that the harmful particles are caused by condensation of hot exhaust vapor from the jets and can make their way into the bloodstream and lungs with the potential to aggravate heart and lung conditions (Barboza 2014). Officials at the South Coast Air Quality Management District, said there is little they can do to reduce pollution from airports because they do not have the power to regulate aircraft emissions and suggests that the U.S. Environmental Protection Agency should have a standard for ultrafine particles like the policy that exists in Europe (Barboza 2014). The local news source “CBS Los Angeles”, also covered the same topic in the article titled “Study: Air Pollution From LAX Affects Residents Up To 10 Miles Away”. The article covers many of the same points but adds that a study by USC found that particle concentrations were twice the normal levels over a 23-square-mile area, five times higher over nine square miles, and nearly 10 times higher within two miles of LAX which is equivalent to levels found in 174 to 491 miles of freeway traffic (CBSLA 2014).

On the other hand, environmental groups were a challenge to find as we were only able to find one source covering the topic of slow disasters for the Inglewood region. A national environmental group called the Sierra Club has a chapter in the Los Angeles and Orange County region. One of its goals is to educate and enlist humanity to protect and restore the quality of the natural and human environment. They offer multiple articles regarding the Inglewood oil field. In an oil field they drill a deep hole into the ground and use the machine shown in Figure 15 to pump the oil out of the ground. In the article “Inglewood Oilfield is Killing Us” published by the Sierra Club, the author explains how the oil field poses a serious threat to the surrounding communities. The oil field pumps over 550 million barrels of oil a

year, but in the process of doing so they release a hoard of toxic chemicals such as methane, benzene, and nitrogen oxides, just to name a few and can cause diseases such as respiratory illnesses, birth defects, increased rates of heart disease, and cancer (Levin 2019). According to the most recent Census data the area is predominantly African-American (Levin 2019). This ties into another issue of environmental racism where minorities are usually at a disadvantage when it comes to the condition of their surrounding environment. As of recently, Culver City has already voted to phase out the ten percent of the oil field and turn it into a natural park (Levin 2019). I was not able to find a local environmental group regarding Inglewood. I don't think that there is a lack of environmental groups in Inglewood since the area is a relatively high polluted area, but rather the information is just very spread out and hard to find.

One thing that we found interesting while researching was when we came across the website for the Inglewood oil field. The website discusses how the oil field is environmentally beneficial as they point out that locally produced oil offsets emissions of imported oil (Inglewood oil field 2017). They are using methods of greenwashing by trying to convince people that they are the lesser of two evils. They also discuss how they are trying to mitigate the effects of their pollution, yet pollution is still being emitted from the oil field and continuing to further harm the health of the communities that surround them.



Fig. 15: Inglewood Oil Field pump

Screenshot taken by Brian W. Carter from Los Angeles Sentinel “Culver City Council Plans to Assess Portion of Inglewood Oil Field”. Retrieved November 9, 2019

<https://lasentinel.net/culver-city-council-plans-to-assess-portion-of-inglewood-oil-field.html>

### **7. What local actions would reduce environmental vulnerability and injustice related to slow disaster in this setting? [Vahe Khachikyan]**

In the case of the Inglewood Oil Refinery, which is home to the largest urban oil refinery in the nation, I strongly believe local actions of the residents in Inglewood and surrounding communities can bring about change to reduce environmental vulnerability and injustice in the setting. With the leadership of California Environmental Justice Coalition (CEJC), I believe the group can unite the residents and bring mounting pressure to politicians and leaders in the political world who are able to address the issue of the slow disaster occurring in Inglewood. The residents can also contact their state officials and pressure them to act, and furthermore, if the current officials are ignoring the issue at hand, they can use their voices to influence the next election and stand behind a candidate who holds their views and will act to reduce the vulnerability. These local actions are currently encouraged by the sitting mayor of Inglewood: in a statement written on the website, James Butts expressed his encouragement to “hear from you on these issues, and welcome your telephone calls, or letters” (Butts, n.d.)

In addition to the potential disaster of Inglewood Oil Refinery, the residents of Inglewood are also dealing with another issue: being so closely located to the Los Angeles International Airport. The effects of the proximity are most felt by low-income residents where “every two to five minutes a jetliner flies...so low that windows rattle” (Smith 2019). The low-income neighborhoods are the ones most suffering from this issue because, while middle-class areas in the city had received funding for soundproof their homes, “one of the poorest neighborhoods where the roar from the Los Angeles International Airport flight path is loudest” had been ignored, despite their eligibility (Fig. 16) (Smith 2019). City officials reported that the main reason most homes get denied for soundproofing in Inglewood is that the FAA believes the buildings are not up to code (Smith 2019). This issue has been getting resolved mainly for residents living in better neighborhoods than low-income residents. A local action that low-income residents can take is to push the landlords to make the buildings up to code in order to receive the FAA funds; moreover, they can form a collective group with other residents that are suffering from the effects of the jets, yet not receiving any funds, and pressure local officials to act and reduce the discrepancy between them and middle-class residents. The residents can also heighten this pressure by getting the media involved to

report on this issue and get it more attention to work in their favor.

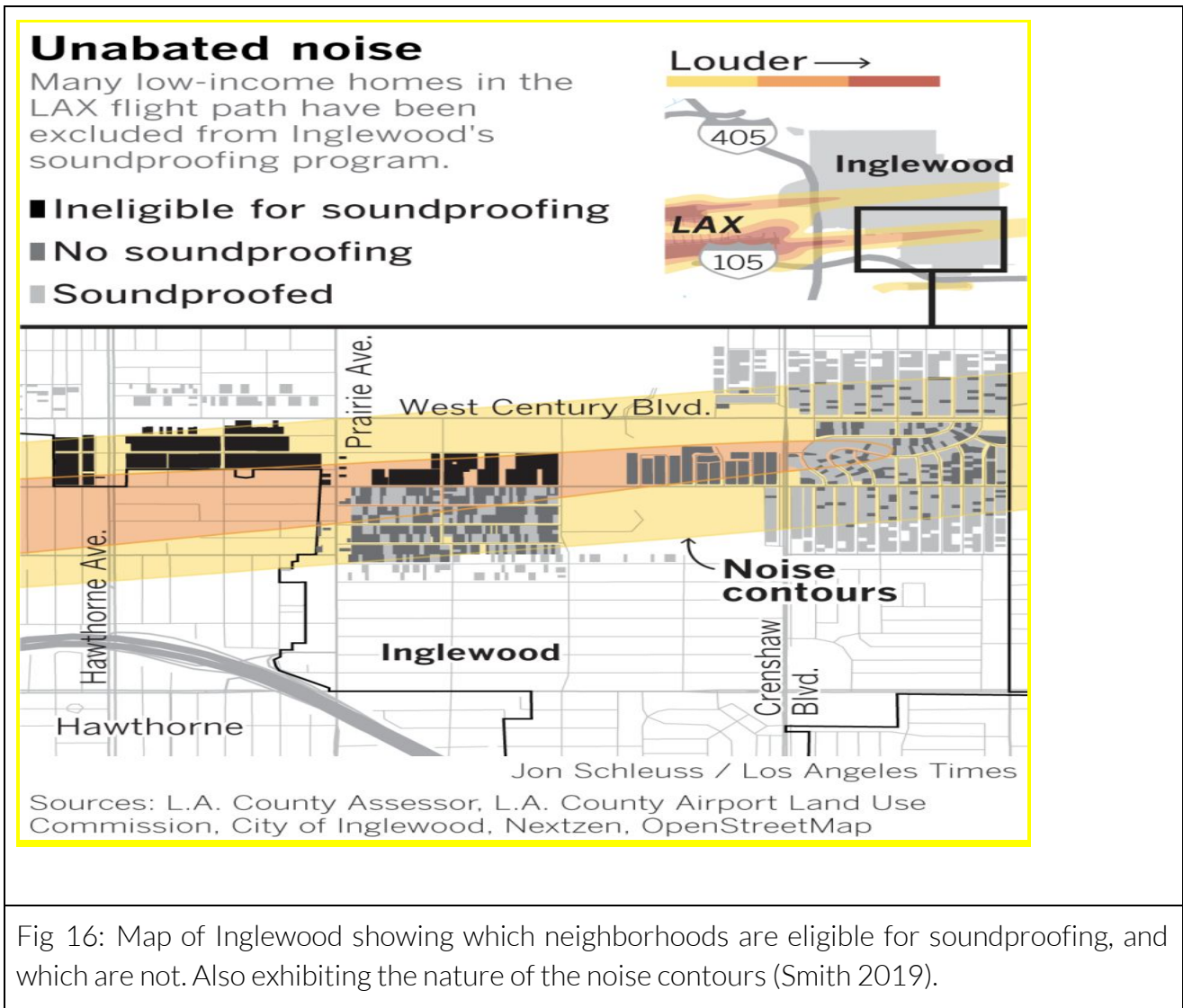


Fig 16: Map of Ingleswood showing which neighborhoods are eligible for soundproofing, and which are not. Also exhibiting the nature of the noise contours (Smith 2019).

**8. What extra-local actions (at state, national or international levels) would reduce environmental vulnerability and injustice related to slow disaster in this setting and similar settings? [Abigail Mesel]**

The lack of financial and political power of Ingleswood residents makes the city very vulnerable to being forgotten and taken advantage of. The most pressing issue that must be addressed is the air pollution caused by jet fuel emissions. There is research being done that suggests a realistic possibility of creating sustainable alternative jet fuel, but the ecological benefit of those fuels comes from the production methods that the carbon emissions when that fuel is

consumed. The goal is to use pre-existing fuel waste to create the fuels instead of having to synthesize completely new fuels. This would allow for a cyclical lifespan of fuel instead of fuel consumption resulting in pure waste. (National Academies of Sciences, Engineering, and Medicine 2016). These developments will be helpful with a long term goal in mind. However, they will not provide relief to those currently and constantly being affected by the massive amounts of fuel being burned right above their heads. The most imperative action that the national government must take is to direct research efforts towards formulating forms of energy for commercial planes to use that have significantly reduced carbon emissions.

While the air pollution in Inglewood is the most direct threat to human health, the extreme noise pollution created by planes can leave long lasting damage on both human and animal life in the area. The Federal Aviation Administration, or FAA, has the ability to make huge changes that could significantly decrease noise pollution. At the Orange County/Santa Ana airport, or SNA, planes are required to follow a very specific takeoff procedure that minimizes engine noise over the surrounding communities (Fig. 17) (Graves 2016). The FAA was active about instating new procedures at SNA because the nearby communities are very wealthy. This proves that the FAA has the ability and power to improve the noise pollution over Inglewood. Thus, another action that the federal government needs to take is to implement similar regulations at LAX to help Inglewood residents. This poorer community should not have to suffer simply because they do not have the same financial or political resources as another community with a very similar issue. The city of Inglewood has received money from the FAA to rebuild homes with soundproofing technology and air conditioning units. However, this housing has gone to the wealthier parts of Inglewood, leaving the 20% of the population that lives below the poverty line to suffer (Smith 2019). To prevent unequal distribution of housing improvements, the state should require cities to utilize funding to aid residents most affected by the pollution first. In this case, that would mean improving housing closest to the airport first and working their way from there instead of cherry picking wealthier communities to bring aid to first. This method of deciding where to start improvements would be objective based on pollution data instead of being subject to whose money and political power can complain the loudest.



Fig. 17: The emissions from planes are clearly visible even from takeoff. As the gases are denser than air, all these pollutants will settle over the city as the planes pass overhead. (Sasahara 2010)



**9. What kinds of data and research would be useful in efforts to characterize and address environmental threats (related to fast disaster, pollution and climate change) in this setting and similar settings? [Paul Chan Nguyen Trinh]**

For Inglewood and the greater Los Angeles County area, data and research that would be useful in bringing the issue of pollution and environmental threats into light of civic discourse and even help in strategizing a plan to address environmental injustice taking place therein, include: Pesticide usage data, studies correlating industrial presence with poor health in surrounding communities, along with public health index maps (Fig. 18) that examine vulnerable populations and the environmental factors responsible.

Beginning with Martinez et al's (2017-2018) research, data concerning opinions on air pollution collected from surveying residents of Inglewood found that airplane traffic was the biggest factor contributing to poor air quality in the area in close proximity to LAX. Conclusions from the study also found that survey participants cited government apathy towards the issue of air pollution. This research reflects constituent notions of insufficiencies in administrative duties on behalf of Inglewood City Council as well congressional representatives in addressing the issue of air pollution. Perhaps local and federal policy makers tapping into the results of this study would be incentivized to lobby for more programs to mitigate the pollution occurring in Inglewood.

Rangan's (2011) comparative study of mortality causes among Inglewood Oil Field communities vs that of control group: Los Angeles County drew the conclusion that deaths occurring from asthma, coronary heart disease, breast cancer, lung cancer, and strokes yielded no statistically significant difference when comparing the two population groups after adjusting for age and ethnic distribution, that communities in Inglewood mortality patterns closely reflected that of the greater LA country area. For Inglewood causes of death from the aforementioned health issues were 731.9 deaths per 100,000 people compared to LA's County's 751.7 per 100,000. What information this study contributes in addressing environmental injustice is that LA County as a whole is exposed to environmental hazards in a ubiquitous capacity. Given its population density and proximity to many industries let, LA is particularly at high risk. This is further coupled with the fact that causes of maligned health in vulnerable communities are hard to pinpoint as a multitude of factors, not just proximity to oil drilling, contribute to the problem. This study demonstrates how sourcing environmental injustice is very inter-disciplinary and requires collaboration from all sectors: scientists, health care providers, policy makers, industries, and members of the community working together to improve health in their communities.

Data from the California Department of Pesticide Regulation (2017) contributes to the public's awareness of the presence of active ingredients in their communities. Appearing in

Figure 19 is data collected from zip codes located in Inglewood.

How reporting of this data helps in addressing environmental injustice is by increasing industrial transparency and disclosure to the public. Cronin (2019) in her letter to parents residing in Anaheim, an urban setting much like Inglewood, cites the Healthy Schools Act of 2000 which, “was signed into law in September 2000 and requires that all schools provide parents or guardians of students with annual written notification of expected pesticide use on school sites”. The data she contributes include naming insecticides like: Deltamethrin, Fipronil, Permethrin, Chlorfenapyr, and Imidacloprid.

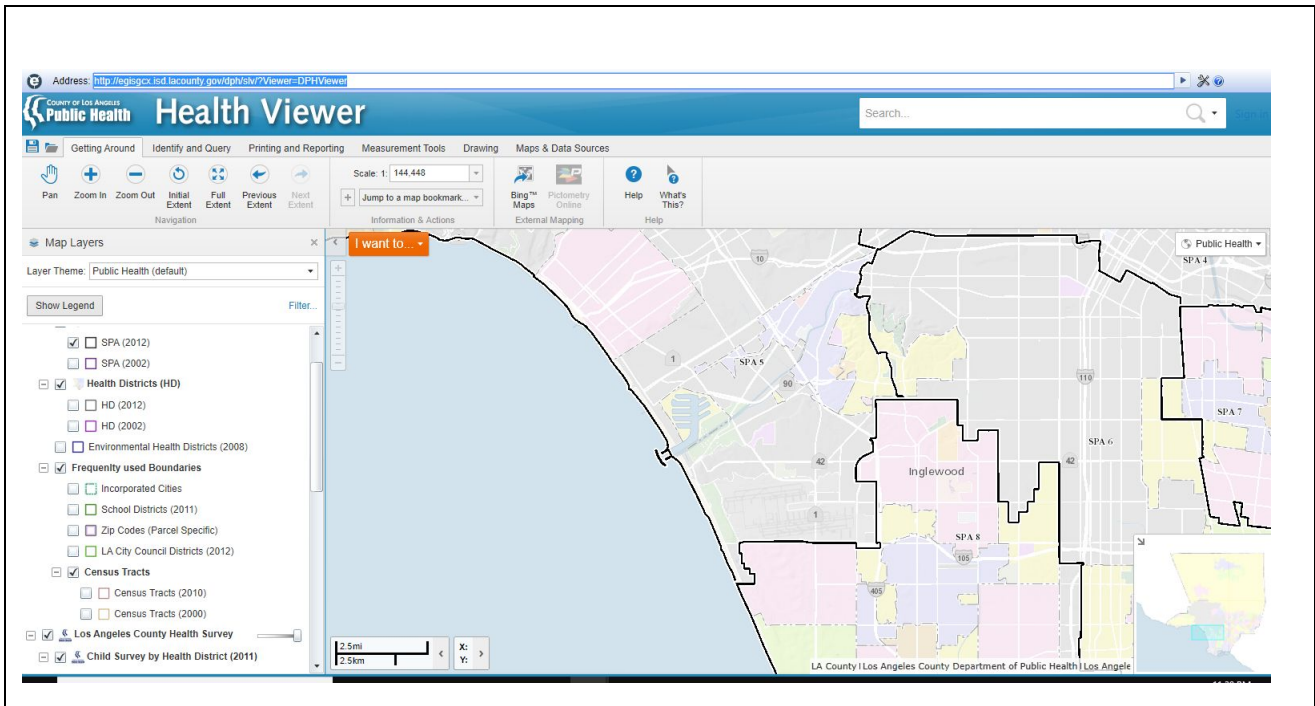


Fig 18: Health Viewer: An interactive application hosting health data for the LA County. Photo source:

chrome-extension://hehijbfgiekmjfkfjpbkbammjbdenadd/nhc.htm?url=http://egisgxcx.isd.lacounty.gov/dph/slv/?Viewer=DPHViewer

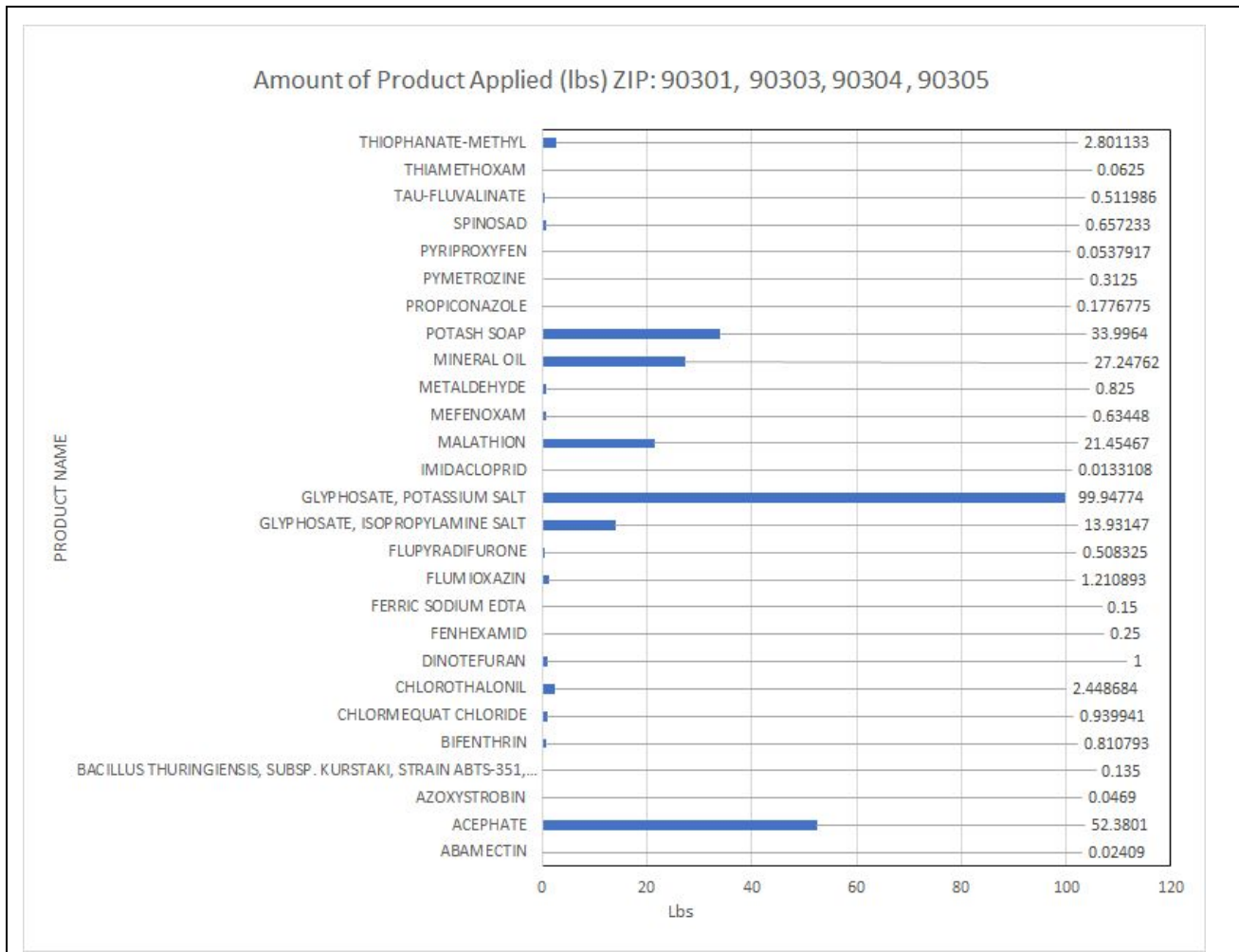


Fig 19: Pesticide usage in Inglewood by pounds(lbs). Data organized through Microsoft Excel Data Retrieved From The California Department of Pesticide Regulation. Calpip Data. HTML file. 2017. [http://calpip.cdpr.ca.gov/download.cfm?id=5296694245469\\_191109180536](http://calpip.cdpr.ca.gov/download.cfm?id=5296694245469_191109180536)

**10. What, in your view, is ethically wrong or unjust in this case? [Dominique Kim]**

Non-disclosure of potential hazards to people and the environment as well as the choice of overlooking proper maintenance of machinery is pretty obviously wrong and unjust in Inglewood, as well as anywhere else. Purposefully excluding residents, community support groups and meetings behind closed doors during which the lives and living situations of residents is just as wrong. In an article on the Sierra Club Angeles Chapter site, David Haake writes about hoping to phase out oil excavation in the Inglewood Oil Field (Haake 2019). In his

article he lists the multiple incidents that affected the lives of residents and/or affected the environment. From oil-water spills to containment tank breaches, toxic releases to the failure of the Baldwin Hills Dam in 1963 (Fig. 20) that resulted in 5 deaths and caused millions in property damage safety precautions were overlooked and residents were left in the dark, only finding out about the hazards once it was right on top of them. In his closing paragraph, Haake brings up the point that “oil and gas operations are inappropriate in urban areas. The only real way to fully protect residents’ health and the health of the environment is to begin the process of ceasing all hazardous activities.” (Haake 2019).

The Inglewood Oil Field is closer to Culver City than Inglewood but to bring attention to the ethically unjust issues occurring to residents in Inglewood calls for pointing the finger at the huge sports culture in California. In Inglewood, approvals and construction is underway for two new sports arenas, one for the NFL and one for the NBA. The one I’m going to be focusing on is the proposed new stadium to house the Clippers. As the arena and it’s progress in trekking on in a forwards direction, residents are finding themselves in danger of relocation, either compensated or forced. In an LA Times article by Angel Jennings, Jennings covers the predicament long time residents are finding themselves in due to imminent rent increases thanks to the arena. The author quotes a residents who sees the situation as making “you [the resident(s)] feel pushed out, like, ‘We don’t need you guys no more, the upper class is going to be moving in.” (Jenning 2019). One part of the article that was upsetting was a quote from Daniel Tabor who was a former mayor and councilman. He is quoted saying “Inglewood is rising again...But it has been a missed opportunity for economic participation by the residents and local businesses.” (Jenning 2019). The reason this was upsetting to me was because in an article by Uplift Inglewood, a coalition of Inglewood residents fighting rent increase and home loss, they wrote that “many acres of Inglewood land currently occupied by a variety of businesses and residences is proposed to turn into a large-scale arena seating 18,000-20,000 people.” Thanks to the action of the coalition, that agreement was halted in favor of the residents and churches in the proposed arena area. How the saving of residences and places for community bonding and small businesses is a missed economic opportunity is baffling to say the least, especially when it is because of this arena that other residents are bracing themselves for the pretty much forced relocation if they don’t agree to pay for the new rent increases. “Pay up or move out” is basically what landlords are saying and this almost makes it a racial attack as the richer are bring brought in to Inglewood while it’s original residents are being forced out. In closing, a quote from Angel Jennings.

“Inglewood is struggling to meet its goal of encouraging more investment while trying to preserve one of California’s last remaining African American enclaves.” (Jenning 2019).



Fig 20: View from inside the reservoir of breach in Baldwin Hills Dam (Photo source: L.A. Times, December 15, 1963). (damfailures.org)

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Fig18: Health Viewer: An interactive application hosting health data for the LA County (Photo source: <chrome-extension://hehijbfgiekmjfkfjpbkbammjbdnadd/nhc.htm?url=http://egisgcx.isd.lacounty.gov/dph/slv/?Viewer=DPHViewer>)

Fig 19: Pesticide usage in Inglewood by pounds(lbs). Data organized through Microsoft Excel Data Retrieved From The California Department of Pesticide Regulation. Calpip Data. HTML

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Fig 20: View from inside the reservoir of breach in Baldwin Hills Dam (Photo source: L.A. Times, December 15, 1963). <https://damfailures.org/case-study/baldwin-hills-dam/>

## APPENDIX- SKETCHES

### Appendix A: Choosing a Community

#### Resources:

- Search community name and "pollution" or "disparities" or "environmental injustice" or "just transition" or "racism"
- [US EPA My Environment](#)
- [CalEnviroScreen 3.0](#)
- [Value of Lead Prevention](#) (California) - Overall cost of lead prevention and cost calculator
- [Bombs in Your Backyard](#) (USA) - Pollution caused by military operations
- [Coal Ash Ponds](#) (USA)
- [World's Air Pollution: Real-time Air Quality Index](#) (Worldwide)
- [U.S. Government Accountability Office](#) (USA) - Disposal of High-Level Nuclear Waste
- [Nuclear Regulatory Commission Map](#) (USA) - Nuclear facilities undergoing

decommission <ul style="list-style-type: none"> <li>• <a href="#">California Open Data Portal</a> (California)</li> <li>• <a href="#">EdSource: Chronic School Absenteeism</a> (California)</li> <li>• <a href="#">California Healthy Places Index</a> (California)</li> <li>• <a href="#">Lung.org Most Polluted Cities</a> (USA)</li> <li>• <a href="#">Mapping LA</a> (Los Angeles) – Crime, Education, Income by neighborhood)</li> <li>• <a href="#">RWJ Resources for Cultures of Health</a></li> <li>• <a href="#">California Poverty Facts</a></li> </ul>		
Questions to Consider:	Community 1: Inglewood	Community 2: Imperial County
<i>Does the community's Wikipedia page give any clues to worse case scenarios? Are there hazardous industries? (Look in the economy section)</i>	No, there is no “economy” section nor any information regarding the environmental state of the area (e.g. the airport and freeways controversy)	It does contain an Economy section and states that agriculture is the biggest industry in Imperial County and has a very large water distribution system
<i>Are there local environmental groups in this community? (Possible search term: environmental justice)</i>	- Social Justice Learning Institute (SJLI) - TreePeople - Healthy and Sustainable Inglewood Collaborative (HSIC)	-California Environmental Health Tracking Program -Comite Civico del Valle -IVAN Imperial
<i>Is the community listed in either of these resources? <a href="#">Who's in Danger?</a> (starting on page 59) /// <a href="#">California Fact Sheet</a></i>	YES	YES
<i>According to the American Lung Association, is the community's <a href="#">state of air</a> rating?</i>	F, F, Fail	F, F, Fail

**Appendix B: Community Fast Facts**

Slow Disaster Community: Inglewood
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<p>Conduct a “quick” Google search for fast facts about your community: What is the landscape? How densely populated? Main industries? Overall wealth of the region? Brief history? Find quick resources/articles about the community: Recent news? What are the environmental groups? Environmental News? Community vulnerabilities?</p>	
<p>Google Search</p>	<p>News Resources</p>
<ul style="list-style-type: none"> <li>- Population of 109,673</li> <li>- Highest employing industry is social security</li> <li>- median income is \$46,389</li> <li>- “Inglewood Airport Area Chamber of Commerce”</li> <li>- “The City's reputation and its accessibility to major freeways and Los Angeles International Airport made it an attractive business investment and an ideal location for the rapidly expanding air freight business.”</li> <li>- “SoFi Stadium is under construction in the city and, when completed around 2020”</li> <li>- The majority of residents in Inglewood are made up of Hispanics and African Americans (minorities)</li> <li>- Has the highest amount of registered Democrats than any other city in California</li> </ul>	<ul style="list-style-type: none"> <li>- <a href="https://datausa.io/profile/geo/inglewood-ca/#economy">https://datausa.io/profile/geo/inglewood-ca/#economy</a></li> <li>- <a href="https://www.latimes.com/opinion/editorials/la-ed-cap-and-trade-20170912-story.html">https://www.latimes.com/opinion/editorials/la-ed-cap-and-trade-20170912-story.html</a> “Inglewood wants \$50 million for transportation infrastructure projects in its downtown redevelopment area”</li> <li>- <a href="https://la.curbed.com/2019/10/11/20908176/inglewood-home-prices-stadium-costs">https://la.curbed.com/2019/10/11/20908176/inglewood-home-prices-stadium-costs</a> “Major investments are pouring into Inglewood, from the \$2.6 billion NFL stadium that’s set to open next summer, to the forthcoming train line that will bring three Metro stations to the city, to new small restaurants and cafes opening in downtown Inglewood.”</li> </ul>

**Appendix C: Stakeholders**

<b>catalysts</b>	<b>“stakeholders”</b>	<b>corrosions</b>
living in low risk/risk-free environment	Residents (living 10 miles east within LAX)	Exposure to noise pollution and gas pollution
Transportation convenience, power in numbers to protest if removal of the highway is suggested	Commuters	Traffic(?)
Reputation and status as a government organization	Environmental Protection Agency	Lack of funding, bureaucratic limitations
Reputation (close relationship to city govt.)	Airport officials	Residents complaining about airport activities/behaviors

Reputation/ city media & press releases	City officials	EJ organizations/ resident complaints
Financing their livelihoods	People seeking employment	Competition for jobs
Providing jobs	Inglewood Oil Field	Pollutions of all sorts such as in the air and water
Power to vote	Registered voters	They're registered but do they actually vote? Are they educated voters?
desire to attain better environmental health	Minorities	Lack of political and financial power to make a difference
Wanting to improve an already lower standard of living	Asthma and Heart Disease Patients	Low SES= limited access to resources: health care
Wanting to improve their community's health	Healthcare Providers	Health care costs are a barrier
Support from fans and pressure from competition	Sports managers & teams	Limited places to practice and multiple teams playing in the same place ( Rams and Chargers)
Support from teams for game/practice venues, revenue from games, advertising opportunity	Sports arena owners	Limited places to build new stadiums, time and money it takes to build each one
Business opportunities, jobs mean providing for dependents or reaching a goal	Construction workers	Unsafe work conditions from tight schedule, chemical exposure from bypassing environmental reviews before building(?), no other work experience(?)

#### Appendix D: Many Forms of Injustice




Types of Environmental Injustice	Example of the type of justice listed that you've learned about through the course and your research. Try to use course concepts (example: "health disparities").	Data collection/research needed to respond to this type of environmental injustice.
<p>1. <b>DATA INJUSTICE:</b> Do stakeholders have the data they need to understand and respond to environmental hazards in this setting?</p>	<p>The city of San Francisco has an outdated EPA EJScreen due to the lack of funding and therefore suffers from data injustice that does not allow them as stakeholders to have the data needed to prepare for environmental hazards.</p>	<p>Research to identify the different refineries located around the South San Francisco area that are not reported to the EPA EJScreen and research on the lack of funding for resources such as the EPA Screen.</p>
<p>2. <b>ECONOMIC INJUSTICE:</b> Does poverty or uneven wealth exacerbate environmental hazards in this setting?</p>	<p>Impoverished communities are forced to pay more for housing and food, known as the "poverty tax" keeping the community in poverty.</p>	<p>Research into the effectiveness of implementing programs for affordable housing and groceries that are tailored per community</p>
<p>3. <b>EPISTEMIC JUSTICE:</b> Are some ways of understanding environmental hazards and harms discounted or silenced?</p>	<p>The use of electricity is said to be more environmentally friendly due to most people knowing about solar panels, windmills, and dams. Although, electricity is most often generated at a power plant that in most cases would be burning fossil fuels that contribute to air pollution.</p>	<p>Research into the amount of electricity generated by all sources and a plan to reduce the amount of power plant usage of fossil fuels would help reduce air pollution and possibly allow a more environmentally friendly electricity generator that can replace the power plants burning fossil fuels.</p>
<p>4. <b>GENDER JUSTICE:</b> How do gender hierarchies shape both exposures to</p>	<p>Studies have shown that women are more affected by pollution such as air pollution than men are</p>	<p>Research on how or why women's bodies are weaker to the effects that pollution has and what kinds of health</p>

<p>environmental hazards and the capacity to address them?</p>	<p>because the women's regulation for their immune system differs to those of men.. Studies have also shown that pollution can cause miscarriages or stillbirth.</p>	<p>effects or consequences it can have on them.</p>
<p>5. <b>HEALTH JUSTICE:</b> Are there health disparities or uneven access to health care in this setting?</p>	<p>In the US, it has been found that minorities are more prone to developing diseases such as asthma because of the greater exposure to polluted areas.</p>	<p>Research on other ways that pollution can affect minorities and what can be done to decrease the exposure to pollution for all types of people especially minorities.</p>
<p>6. <b>INTERGENERATIONAL INJUSTICE:</b> Will future generations be impacted by environmental hazards in this setting today?</p>	<p>Children in communities with poor air quality are more susceptible to asthma, because they are raised in a polluted environment, and are not informed enough to avoid exposure (playing outside). They cannot change their situation on their own. What's more is that residents often don't have the financial capacities to move their children to more air-safe areas.</p>	<p>Research into the results and cost-effectiveness of building/ retrofitting houses with ventilation systems (Seattle's Breathe Easy Homes).</p>
<p>7. <b>MEDIA JUSTICE:</b> Is there adequate news coverage of the environmental hazards in the setting? Does news convey the perspectives and vulnerabilities of all stakeholders?</p>	<p>Since the vast majority of news sources are owned by large corporations, there is often not adequate news coverage of environmental hazards because the corporations benefit from keeping possible activists and change-makers in the dark.</p>	<p>Self-Reporting on social media by being outspoken about environmental hazards one is experiencing or aware of can help remedy a lack of media reporting. While the ideal situation would be that media outlets are more transparent and investigative with such important topics, first-person accounts posted to the massive audience of</p>

		the internet can greatly improve awareness of environmental hazards. Once people's stories start being exposed to the world, news outlets will be forced to cover them.
8. <b>PROCEDURAL JUSTICE:</b> Have all stakeholders had fair access to government support and law to address environmental hazards in this setting?	People in disadvantaged communities often show low voter turnout and so don't elect policy makers that reflect their concerns. Incumbent policy makers perhaps have their pockets lined by special interest groups.	Research on the lack of representation of minorities in policy-making as well as the lack of participation of people that feel their voices are not heard.
9. <b>RACIAL JUSTICE:</b> Do environmental hazards in this setting disproportionately impact particular social groups, especially communities of color?	Poor minority communities are more likely to be affected by environmental hazards such as in Richmond, California where the community's demographic is 42% Hispanic or Latino, 20.2% Black or African American Alone, and 17.9% White Alone.	Research to identify interventions specifically designed to help make the conditions of these poor minority communities better and more suitable for health conditions.
10. <b>REPRODUCTIVE JUSTICE:</b> Do environmental hazards in this setting undermine rights to safely parent children?	In Richmond, California children are more likely to develop asthma due to the poor air quality in their community.	Research to identify interventions specifically designed to help mitigate exposure to air pollutants.

## ABOUT THE AUTHORS



BIOGRAPHICAL STATEMENT	PHOTO
<p>Dulce S. Garfias is a first-year Psychology student at the University of California, Irvine. Her areas of interests revolve in the human mind, behavior and interactions with society and she is also interested in political issues and is considering minoring in political science.</p>	
<p>Bethany Hatsios is a first-year Earth Systems Science major at UCI. She hopes to pursue a career in geology and eventually exogeology. She is concerned about the relationship between the practices of large corporations and burdened communities. Furthermore, she is interested in environmental ethics, and the health implications resulting from dangerous chemicals and unethical environmental practices.</p>	
<p>Katherine Lopez is a Public Health Science at the University of Irvine, California. Currently interested in learning about intervention that can help the community's overall health.</p>	

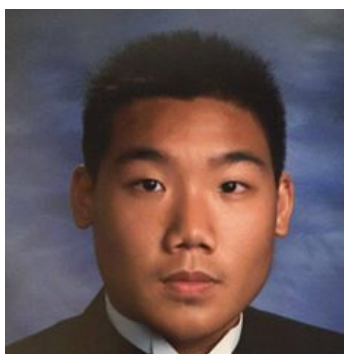
Melissa Del Castillo is a third-year student at UC Irvine majoring in public health sciences. She interns in a toxicology lab, works in chemistry outreach at UCI, and is a board member for the Orange County Hispanic Youth Chamber of Commerce. Her goal after school is to go to grad school and then go back to help the low-income community she came from.



Apisaloma Siufua is a second-year student at the University of California, Irvine. He is currently undeclared but is considering becoming a Mechanical Engineering major. He is interested in Mechanical drafting and technical sketching and his goal is to obtain a career as a Mechanical Technical Drafter in the Prosthetic Industry.



Jawara Li is a second year Environmental Engineer at the University of Irvine, California. He is interested in renewable water projects and his goal is to work for the water district to help make the world more sustainable.



Vahe Khachikyan is a fourth-year Criminology, Law and Society student at UC Irvine. His areas of interest are law and criminal justice. His goal is to attend law school and become a lawyer that serves corporate clients.



Abigail Mesel is in her first year of studying Music at the University of California, Irvine. She is also interested in chemistry and forensics. She is particularly interested in toxicology and the long term impacts of pollution and climate change on human health. She is considering adding chemistry as a second major and pursuing forensics or environmental science in graduate school.



Paul Trinh is a second-year undeclared major at the University of California. He is interested in pursuing a major in Mathematics. His interests include probability and risk-assessment as it pertains to his goal of becoming an actuary, a career that deals in creating insurance and pension policies.



Dominique Kim is a third-year biology student at the University of California-Irvine. She is currently in the process of changing her major to art. She is taking Anthropology 25A *Environmental Injustice* to aid her efforts towards promoting sustainability and environmental awareness on her campus.

