Like many suburban cities throughout the nation, the city of Cranston is becoming increasingly diverse. As residents, it’s our responsibility to help build a future where all of our neighbors are welcomed as equal players. That’s why we’re working on community engagement projects to create an economy that serves everybody. That means looking at our history and the people that lived and worked here in the past, investigating the present dynamics, and learning to serve our diverse communities, and their opportunities and hardships.

More than a hundred years ago, Cranston was a mecca for employment for the whole state of Rhode Island. The area was home to countless industrial sites including Cranston Print Works, a massive textile printing facility that opened in 1807. The plant employed hundreds of people and was a site of incredible social cohesion; the people in the community shared celebrations and festivals, schools, churches, a grocery store, and a popular restaurant. They all helped each other out because they all lived and worked in the same place.

Now that we are a post-industrial city, we still have that sense of being close-knit. However, we’ve gotten larger population-wise and we’ve changed demographic-wise. With these changing dynamics, how do we keep that sense of belonging? We’ve addressed this in the past — nothing needs to be reinvented — but we have to work in a 21st century mindset to create a sense of belonging for everyone that joins this close-knit community.

This issue of the Community Science Forum is a picture painted from the history of Cranston, seen through the lens of one site: the Cranston Print Works. At one point it employed a majority of the city and was a bustling hub of industry. After some 200 years of operation, it faced the fate of so many industrial sites in the area, struggling to stay afloat as manufacturing jobs left the area for more modern means of production. The site was ultimately shuttered in 2009. In the following years, a community has come together to help preserve the legacy of this storied site.

INTRODUCTION

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Through my work with OneCranston, a cross-sector collective impact table, we’re building partnerships for community engagement. Working with Public Lab, we’ve held events with middle school students from the 21st Century Community Learning Center, doing aerial mapping and water testing at the Cranston Print Works site. At a later event, we did kite flying with adults, many of whom shared their memories about visiting the store on the site, working at the plant, and the generations of families who worked there. And through a partnership with Brown University, we’re interested in connecting the work we’ve done here with the industrial history of the area, which is one of their topics of study. The historical databases and maps they are collecting, and which you’ll read about in this issue, form a powerful part of this story.

We’ve sparked people’s curiosities about how to be inclusive, and how to focus that inclusivity around the very diverse community that now lives here. We’re working together on issues of equity, opportunity, and education, taking bits and pieces from the local history, by sharing, socializing, connecting, and building relationships around our history, we’re working together to make sure there is an opportunity for all as we form a vision for the future of Cranston.

Ayana Crichton is the Initiative Director for OneCranston housed at the Cranston Community Action Program and an initiative of the Working Cities Challenge through the Federal Reserve Bank of Boston, and is an Afterschool Alliance Ambassador for Rhode Island.
THE SOCIO-ECOLOGICAL CITY PROJECT

OneCranston is collecting stories and reflections by the Cranston community about the history of the area, from memories of the Cranston community to better understand the changing relationships between people, industrial sites in Rhode Island, and are looking for community observations and stories related to these themes. With these goals in mind, we’re working together to create an interactive online map where you can share your story. Visit PublicLab.org/rimap to learn more.

In the spring of 2016, I worked with Ayaan Chitekar, Clara Stoner, and kids from the OneCranston project and their community partner for a second event at the Cranston Print Works site, using Public Lab’s Coqui water conductivity sensor—a sensor that generates an audible tone when you dip it into water. We were interested in using the Coqui within a group of kids, and with real water samples we pulled from the Pocasset River that runs through the property. Though the Coqui itself can’t produce a musical rending of conductivity, the pitch of the sound it makes goes up if the liquid it’s dipped into is more conductive—so it can be used to compare conductivity among samples.

We started by pulling some samples from the river using small glass bottles and at one hour intervals. We had on hand, kids could all join them in safely learning out over the water. We provided gloves so they didn’t have to touch the water itself.

The Coqui is a small USB-powered speaker for smartphones.

A WINTRY KITE MAPPING AT CRANSTON PRINT WORKS

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Cranston, Rhode Island’s immigration story isn’t unique. Our history follows national trends in the 19th century, European migrants, many from Ireland and Italy, coming to America and finding employment in American mills and textile manufacturing companies. Immigration is an American story that is still being written, with patterns of migration changing in every chapter.

Over the past 50 years in Cranston, we’ve seen the growth of immigrant populations from Cambodia and the Dominican Republic, and the story continues to unfold as both populations are still growing locally. As we look at where migrant groups find work, we find that many in our Cranston community have found employment in handloom, including textile and other manufacturing jobs, in leadership roles at the nonprofit level, and in our schools. Moreover, according to Cranston community leaders, a lack of opportunity and an overall lack of feeling welcomed by the city contributed to instill those in pain, violence.

The vibrant and energetic Cambodian community has been migrating to Cranston (and all of New England) for five decades. The first wave of people from Cambodia coming to America were refugees who escaped a dangerous government system that was killing hundreds of thousands in their home country — many people were scared by memories of unspeakable horrors.

As Cambodians have made their home in the area, many have found employment locally, but have had limited access to community centers — a story that has changed very little over the past five decades. The community is marginalized when it comes to equitable educational opportunities, and isn’t consulted appropriately as city-backed initiatives address gang violence. The community also lacks trust to gather and organize, and when they do try to access leadership, there is often a lack of understanding or interest from community leaders.

Further, leaders in the Cambodian community are often excluded from leadership opportunities, resulting in a feeling of not being heard, and limited access to leadership roles. The community lacks safe spaces to gather and organize, and often feels marginalized when it comes to equitable educational opportunities, and is left out of discussions about how to address the needs of the community.

Recently, the Cranston Public Library held a celebration of Southeast Asian culture, in which people from the Cambodian community shared their experiences. The library also hosted a collection of bilingual books and introduced new resources for community members: meeting spaces, educational programming, and technology classes. Yet in the right direction, there are still many questions left to answer. How will Cranston work together to address the needs of the Cambodian community? How will Cranston work together to address equitable educational opportunities, career ladder opportunities, workforce development, and fair and livable wages for migrant communities? At OneCranston, we’re working on addressing these questions through a collaborative leadership table that shares power to increase upward socioeconomic mobility for all Cranston residents.

In our future, we’re aiming to make sure all neighbors can be the authors.

MEMORIES WITH MOLLY

By Ayana Crichton

Molly and her mom eagerly got into their green Volkswagen and pulled out of the driveway for another adventure. These moments were like a breath of fresh air, getting away for just a short while from the reality at home. Molly watched as the house slowly disappeared. Her mom’s face brightened as she asked, “Whatcha lookin’ for today, Molly?” She had been working on sewing a skirt, which her mother knew, but it was tradition for her mom to take her back to Print Works to look for more so she could be an amazing outfit. Molly skimmed through fabric meticulously, just like her mother. She fingered across the smooth fabric prints, remembering her new outfit and laying out plans for creating something fashion-forward. When she found the right one, she always knew right away. She grabbed a purple patterned fabric and immediately fell in love. Back at home, she sewed away, happy to know this was destined to be an amazing outfit. Molly loved the fabric so much that she hugged her mom to take her back to Print Works to look for more so she could make a matching top. Unfortunatly, when they arrived and searched, the patterned purple fabric was gone — typical for a unique and beautiful piece.

Molly’s brother was older than her and, as Molly was being a bit of a brat, the siblings were always arguing. She couldn’t help but get along with her brother, and would often tease each other. Molly’s mother would say, “Worrying doesn’t work.” She encouraged praying instead because she believed that faith was the only way to change outcomes. It was that same belief that made Cranston Print Works a place of healing for Molly and her mother, where they could pour over piles of fabric, discovering endless fascination and possibility with which to make a new skirt or shirt.

Molly strolled through fabric meteorically, just like her mother. She searched for the familiar Cranston Print Works logo — the sign of authenticity — and seized her chance across the smooth fabric, picturing her new outfit and laying out plans for creating something fashion-forward. Yet when she found the right one, she always knew right away. She grabbed a purple patterned fabric and immediately fell in love. Back at home, she sewed away, happy to know this was destined to be an amazing outfit. Molly loved the fabric so much that she hugged her mom to take her back to Print Works to look for more so she could make a matching top. Unfortunately, when they arrived and searched, the patterned purple fabric was gone — typical for a unique and beautiful piece.

Molly’s brother posed near her, a_facturing accident. He broke through the glass, cutting off her vision, and her breath froze. Shocked and paralyzed, Molly came up with the right story to tell. She broke into tears for a few moments, recollecting how, just like the memories of her brother, she couldn’t stop thinking about that purple patterned fabric. A few years later, Molly and her mother went on another one of their adventures, a christening at a modest fabric shop in St. Mary’s Church, right down the street from Cranston Print Works.

As she was about to walk in, Molly noticed the fabric. She turned to glance at her mother, and both shared a smile. They were both happy to find the fabric again and bring it back to Cranston Print Works.

WORRYING DOESN’T WORK

By Ayana Crichton

As we look at where migrant groups find work, we find that many in Cranston have found employment in hands-on work, including textile and other manufacturing jobs, in leadership roles at the nonprofit level, and in our schools. Moreover, according to Cranston community leaders, a lack of opportunity and an overall lack of feeling welcomed by the city contributed to instill those in pain, violence.

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Recently, the Cranston Public Library held a celebration of Southeast Asian culture, in which people from the Cambodian community shared their experiences. The library also hosted a collection of bilingual books and introduced new resources for community members: meeting spaces, educational programming, and technology classes. Yet in the right direction, there are still many questions left to answer. How will Cranston work together to address the needs of the Cambodian community? How will Cranston work together to address equitable educational opportunities, career ladder opportunities, workforce development, and fair and livable wages for migrant communities? At OneCranston, we’re working on addressing these questions through a collaborative leadership table that shares power to increase upward socioeconomic mobility for all Cranston residents.

In our future, we’re aiming to make sure all neighbors can be the authors.
What goes into a dye maker’s recipe? The simplest answer would appear to be various dyes, time, trial and error. This response, however, does not even begin to scratch the surface of textile dyeing. As shown in the dye recipe journals, dated 1847-1876, and left behind by Mr. Richard Crompton, the superintendent for Cranston Print Works in the 1800s. These dye recipes included complex calculations of colors, used in certain doses and added in specific orders. Additionally, chemicals such as madder, arsenic, lime, tannic acid, and lead tannate, among others, were added to the recipes, each serving a specific purpose.

As the oldest textile printing company in the country, Cranston Print Works pioneered the industry in calico printing and chemical bleaching. Skilled laborers, primarily men, were used to run machinery, whereas unskilled laborers, mainly women and children, were used in the cotton-reeling, bleaching, and dyeing rooms. Chemical bleaching involved the use of chemicals to decolor fabrics by dulling their natural color. Substances such as chlorite, lime, soda ash, ash water, liquor, and vitriol, all referenced in the dye journals, were used in chemical bleaching—the most dangerous of these substances being vitriol, otherwise known as sulfuric acid. It is known to cause skin irritation and burns, organ damage, blindness, and even death. Women and children faced the highest risk of injury based on their jobs working in the bleaching rooms.

In the dye rooms, workers used synthetic dyes laced with substances such as madder, potassium chloride, nitrates, various acids, and heavy metals including arsenic, chlorine, tin, and lead. These substances were used to bind or “fix” color to cloth, making colors appear faded or brighter, and to decrease the rate at which the color would fade from the material.

Madder, a chemical agent used to bind color to cloth is known to cause cancer, miscarriage, and birth defects. It is most commonly used in stencils, lead, zinc, and copper— all used to enhance the dye process—causing a range of health ailments. This includes, chlorite inks, skin irritation, kidney and liver damage, anemia, shock, and death. Selenium, arsenic, and tannic acids, all present in the dyeing process, are known to cause severe skin blisters, difficulty breathing if inhaled, stomach pain, vomiting, and death. Additionally, the heavy metals used in the dye process present the most severe reactions, including rashes, vomiting, abdominal cramps, headaches, severe illness, and even death.

The effects of the substances used in textile printing reach far beyond the health outcomes that the workers were subjected to. As men in other New England factories, textile workers had negative impacts on the land and water around them. Prior to government laws and regulations, chemicals and dye byproducts were typically dumped into the water system or in pits surrounding the factories. During the actual dye process, only about 80% of the dye solution would adhere and stay on the fabric. The remaining solution went into the waterways. From there, not only were Print Works employees and their families at risk from the negative effects of these chemicals, but anyone living downstream and in the watershed were also at risk.

While we are aware of some of the various chemicals, metals and acids that Cranston Print Works used in their dye processes, we are less aware as to where the leftovers and waste materials went. One could easily speculate that it ended up in Print Works Pond or buried on the Print Works’ sprawling property. However, to date, no ground or water testing has been done at a large-scale effort to see what exactly has been left behind in nearly two centuries of textile printing. This time has come to consider the next steps for the future of the Cranston Print Works property.

Summer Gonsalves is a Research Associate in the Superfund Research Program’s Community Engagement Core at Brown University.

RECIPE FOR DYES

Arches Dye recipe reads: Brown Work, black red on No 7.5 H, purple black page 29, blue page 49, No 7.5 purple lake, 9 quarts barley gum, water at 20 degrees C, 34 parts tannic acid, 61 parts tannin, 7 parts vitriol.