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Sustainability Report Overview

■ by Jeffery Fraser

On the steep banks of the Monongahela River in Hazelwood rests the City of Pittsburgh’s last great brownfield. Only the shell of the former bar Mill 19 stands as evidence of the steel and coke works that for more than a century had given the neighborhood stability, prosperity and some of the unhealthiest air in the region. The rest of the 178 acres lies freshly graded in preparation for its next chapter as a high-profile example in sustainable community development.

The master plan is one of a model mixed-use community built to sustainable design standards that includes housing, research labs, office space, light manufacturing, retail, green storm water management and “complete streets” designed to safely accommodate pedestrians, bicyclists and motor vehicles. It is intended to reduce local air and water quality problems rather than add to them. And it is accompanied by strategies funded by local foundations to improve the

quality of life of Hazelwood residents who’ve endured difficult years for decades and not displace them.

No other project in southwestern Pennsylvania better embodies the concept of creating a just and sustainable economy, environment and society that has drawn increasing interest in the region. In the City of Pittsburgh, for example, Mayor William Peduto announced a citywide initiative to pursue such a future in 2015 and, in October, the city unveiled a wide-ranging set of metrics for guiding decisions on future development that are based on principles of sustainability.

A new report published by Sustainable Pittsburgh examines the region’s progress across 29 environmental, economic, social equity and quality of life indicators the nonprofit selected as key measures of sustainability. *Southwestern Pennsylvania Sustainability Goals + Indicators Report 2016* was written and largely researched by the Pittsburgh Today

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Nonemployer Statistics and the Pittsburgh (Gig) Economy

■ by Christopher Briem

Fundamental changes in the nature of employment are changing the way many economists measure both national and regional economies. Self-employment or freelance employment is far from new, but increasingly is being described as the “gig economy.”

Changes taking place in many industries have seen more workers not employed as typical wage and salary workers, but freelancers either part time or as their primary employment. These impacts are already being observed across the Pittsburgh region.

In October 2016, the Brookings Institution released a report on the “gig” economy. The Brookings report looked at the recent impact of new ridesharing services on metropolitan regions across the country, analyzing trends in what are referred to as nonemployer statistics.

There is no specific definition of the gig economy, making measurement of gig economy employment

or output trends difficult, but nonemployer data are one means to estimate it. Nonemployer statistics are compiled by the U.S. Census Bureau from tax data provided by the Internal Revenue Service (IRS) and are a primary source of data on self-employment patterns for both national and local economies.

For the Pittsburgh MSA, Brookings found that the number of nonemployer establishments in Ground Transportation and related industries increased by 85 percent between 2012 and 2014—a period when comparable payroll employment in the industry decreased by 5 percent.

This period covered the startup of ridesharing services such as Uber and Lyft in Pittsburgh. Brookings also benchmarked changes in nonemployer statistics across fifty Metropolitan Statistical Areas (MSA), and Pittsburgh

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Nonemployers in the Pittsburgh Economy

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ranked #8 in the percentage increase in ground transportation gig employment.

Most nonemployers are self-employed individuals operating unincorporated businesses, known as sole proprietorships, which cover most freelance workers. Many gig workers fit the Census definition of a nonemployer. In most cases a nonemployer establishment is a self-employed individual operating a very small, unincorporated business with no paid employees, making nonemployer data a useful tool for evaluation of trends in the gig economy.

But the gig economy and nonemployer business activity is not limited to ground transportation industries; it is a growing

part of the regional economy across a wide range of industries. The Pittsburgh MSA had 141,732 nonemployer establishments in 2014, a 4.4 percent increase from 2010 (see Table 1).

Total receipts for Pittsburgh nonemployer establishments totaled over \$6.4 billion in 2014, meaning that the average nonemployer reported over \$46,000 in annual receipts.

Average annual receipts for nonemployer filings vary significantly across industries. For Pittsburgh in 2014, average annual nonemployer receipts ranged from just over \$12,000 in educational services industries to over \$98,000 in real estate industries (see figure).

As is typical for the nation, the largest number of new nonemployer filings in Pittsburgh is spread across a wide range of Professional and Professional Services industries with the largest recent growth in the number of nonemployer establishments.

Looking at more detailed sub-industries, other than real estate, significant recent growth in Pittsburgh nonemployment activity is found in Spectator Sports and Related Industries, with a gain of 1,169 new nonemployer establishments between 2010 and 2014, and Personal and Laundry Services, with 1,123 new filings over the same period. One of the largest percentage increases in nonemployer filings matches what was shown in the recent Brookings report, with a gain of 124% in the number of nonemployment establishments.

Even though the number of nonemployer establishments is growing across the region, the Pittsburgh MSA has a comparatively low level of nonemployers. A ratio of total nonemployer establishments to wage and salary employment by MSA compares the scale of nonemployer activity across the 30 largest MSAs.

Table 1. Nonemployer Establishments by Industry, Pittsburgh Metropolitan Statistical Area, 2010-2014

Industry	Establishments					Change 2010-14	
	2010	2011	2012	2013	2014	#	%
Agriculture, Forestry, Fishing and Hunting	600	596	610	617	574	-26	-4.3%
Mining, Quarrying, and Oil and Gas Extraction	1,380	1,422	1,363	1,307	1,385	5	0.4%
Utilities	109	113	126	118	133	24	22.0%
Construction	15,872	15,778	15,478	15,369	15,798	-74	-0.5%
Manufacturing	2,018	2,012	2,083	2,073	2,103	85	4.2%
Wholesale Trade	2,626	2,560	2,569	2,552	2,594	-32	-1.2%
Retail Trade	12,478	12,883	13,303	13,353	13,596	1,118	9.0%
Transportation and Warehousing	4,281	4,299	4,290	4,252	4,829	548	12.8%
Information	1,965	1,929	1,968	1,914	1,939	-26	-1.3%
Finance and Insurance	5,338	5,351	5,448	5,397	5,585	247	4.6%
Real Estate and Rental and Leasing	13,997	14,109	14,499	14,768	15,392	1,395	10.0%
Professional, Scientific, and Technical Services	22,269	22,418	22,526	22,558	23,313	1,044	4.7%
Administrative and Support and Waste Management and Remediation Services	9,598	9,598	9,604	9,597	9,741	143	1.5%
Educational Services	3,912	3,987	4,185	4,400	4,723	811	20.7%
Health Care and Social Assistance	10,433	10,579	10,186	9,934	10,115	-318	-3.0%
Arts, Entertainment, and Recreation	7,682	7,951	8,275	8,494	9,030	1,348	17.5%
Accommodation and Food Services	1,951	1,976	1,885	1,893	1,959	8	0.4%
Other Services (except Public Administration)	17,836	18,373	18,012	18,420	18,923	1,087	6.1%
Total	134,345	135,934	136,410	137,016	141,732	7,387	5.5%

Source: U.S. Census Bureau

Table 2. Total Receipts of Nonemployer Establishments by Industry, Pittsburgh Metropolitan Statistical Area, 2010-2014

Industry	Receipts (\$millions)					Change 2010-14	
	2010	2011	2012	2013	2014	#	%
Agriculture, Forestry, Fishing and Hunting	\$23	\$21	\$23	\$25	\$22	-\$1	-3.3%
Mining, Quarrying, and Oil and Gas Extraction	\$117	\$117	\$105	\$97	\$100	-\$17	-14.5%
Utilities	\$5	\$5	\$5	\$5	\$7	\$2	32.6%
Construction	\$807	\$823	\$847	\$847	\$884	\$77	9.6%
Manufacturing	\$96	\$100	\$98	\$97	\$100	\$5	4.9%
Wholesale Trade	\$240	\$243	\$235	\$222	\$220	-\$19	-8.1%
Retail Trade	\$528	\$570	\$560	\$554	\$566	\$38	7.1%
Transportation and Warehousing	\$263	\$288	\$274	\$271	\$289	\$25	9.6%
Information	\$51	\$53	\$56	\$53	\$60	\$9	18.2%
Finance and Insurance	\$356	\$366	\$382	\$394	\$437	\$81	22.6%
Real Estate and Rental and Leasing	\$1,270	\$1,320	\$1,395	\$1,446	\$1,510	\$240	18.9%
Professional, Scientific, and Technical Services	\$861	\$920	\$959	\$919	\$976	\$115	13.4%
Administrative and Support and Waste Management and Remediation Services	\$203	\$214	\$220	\$230	\$233	\$31	15.0%
Educational Services	\$48	\$52	\$52	\$53	\$57	\$9	19.7%
Health Care and Social Assistance	\$325	\$329	\$321	\$318	\$336	\$11	3.4%
Arts, Entertainment, and Recreation	\$145	\$155	\$167	\$174	\$189	\$44	30.1%
Accommodation and Food Services	\$93	\$93	\$93	\$95	\$98	\$5	5.7%
Other Services (except Public Administration)	\$472	\$492	\$481	\$496	\$502	\$30	6.3%
Total	\$5,902	\$6,161	\$6,274	\$6,296	\$6,586	\$685	11.6%

Source: U.S. Census Bureau

Table 3. Detailed Industries with Largest Increases in Nonemployer Filings, Pittsburgh Metropolitan Statistical Area, 2010-2014

NAICS	Industry	Establishments					Change 2010-14	
		2010	2011	2012	2013	2014	#	%
531	Real Estate	13,601	13,682	14,071	14,366	14,956	1,355	10.0%
711	Performing Arts, Spectator Sports, and Related Industries	6,629	6,875	7,143	7,333	7,798	1,169	17.6%
812	Personal and Laundry Services	11,639	12,134	11,825	12,242	12,762	1,123	9.6%
541	Professional, Scientific, and Technical Services	22,269	22,418	22,526	22,558	23,313	1,044	4.7%
611	Educational Services	3,912	3,987	4,185	4,400	4,723	811	20.7%
485	Transit and Ground Passenger Transportation	578	684	724	752	1,298	720	124.6%
454	Nonstore Retailers	6,040	6,322	6,540	6,637	6,612	572	9.5%
621	Ambulatory Health Care Services	6,028	6,166	6,223	6,282	6,543	515	8.5%
524	Insurance Carriers and Related Activities	3,193	3,273	3,344	3,294	3,431	238	7.5%
448	Clothing and Clothing Accessories Stores	831	898	951	970	1,033	202	24.3%

NAICS = North American Industrial Classification System

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Sustainability Report Overview

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regional indicators project of the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh.

The findings underscore the challenges of achieving a sustainable future that’s a stark departure from the region’s not-too-distant past and show where progress is being made toward achieving such a future.

Air and water

Air quality has improved over the past 15 years as a result of the thinning of the heavy industry, tighter local and national regulations, advocacy efforts to improve compliance, technological advances and industry investment in reducing emissions.

The trend is reflected in annual summaries of the U.S. Environmental Protection Agency’s (EPA) Air Quality Index (AQI), which rates daily air quality on a scale ranging from “good” to “very unhealthy”

based on concentrations of five major air pollutants regulated under the Clean Air Act. From 2003 to 2015, the number of days during the year that the air in the Pittsburgh MSA earned a “good” rating increased from 20 to 122 while the number of unhealthy days decreased.

Annual levels of two of the most widespread major pollutants—ground-level ozone and fine particulates, or PM2.5—also decreased over that period. Releases of toxic chemicals have fallen by 60 percent in the Pittsburgh MSA since 2008, according to EPA Toxic Release Inventory (TRI) data. The TRI tracks industrial emissions and land disposal of more than 650 chemicals, including carcinogens.

However, the improving trends are not good enough to bring the region into attainment of EPA health-based standards for ozone, PM2.5 and sulfur dioxide. And even the record high of 122 “good” air quality days reported in 2015 means the

air received a healthy rating for only one-third of the year, when all seven Pittsburgh MSA counties were also listed as being in nonattainment with National Ambient Air Quality Standards for ground-level ozone.

Wet weather continues to cause sewage mixed with storm water to overflow into the region’s three major rivers from inadequate municipal sewer systems. The high bacteria levels that result lead the Allegheny County Sanitary Authority to issue warnings to limit contact with the water. Such conditions have led to warnings covering 22 percent to 91 percent of the recreation season since 2000. Although the number of alerts typically follows rainfall levels, recent disruption of that trend suggests interventions may be helping to ease the problem.

Energy

Southwestern Pennsylvania is a major energy-producing region generating more than three times more electricity than is consumed locally. More than 80 percent of that production is generated from carbon sources, such as coal and natural gas.

But in a region where coal was once king, nearly half of the electricity consumed is generated from non-carbon sources. In 2014, an estimated 49 percent of electricity consumed locally was from carbon-free sources, mostly nuclear. Only 1.6 percent of locally consumed electricity was from renewable sources, an analysis of U.S. Energy Information Administration data suggests. By comparison, in 2015, more than 13 percent of electricity produced in the U.S. came from renewable sources.

Income and housing

Only conditions brought on by the 2007-2009 recession have interrupted a steady increase in household income across the Pittsburgh MSA.

Even with a two-year decline, median household income rose nearly 30 percent from 2005 through 2015 to reach \$54,080 a year, according to U.S. Census Bureau American Community Survey one-year estimates. The 3.4 percent increase from

Air Quality Index, Pittsburgh MSA

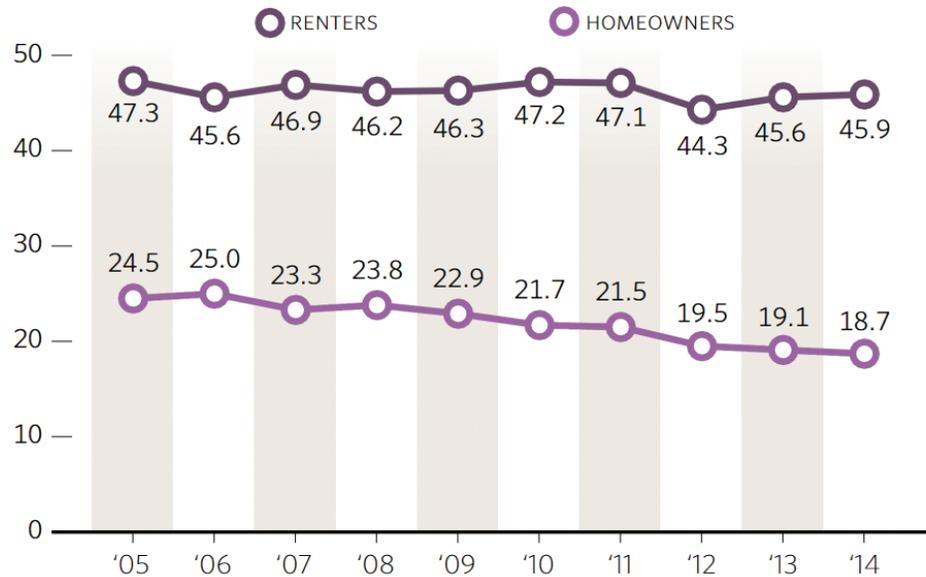
YEAR	NUMBER OF UNHEALTHY DAYS FOR SENSITIVE GROUPS	NUMBER OF UNHEALTHY DAYS	NUMBER OF VERY UNHEALTHY DAYS	NUMBER OF GOOD DAYS
2003	127	20	3	23
2004	110	25	0	38
2005	118	32	1	29
2006	97	19	0	45
2007	87	28	0	46
2008	90	12	0	31
2009	66	7	0	46
2010	65	18	0	89
2011	54	6	0	78
2012	58	9	0	77
2013	23	1	0	116
2014	21	1	0	106
2015	30	2	0	122

The index estimates the daily health risk based on levels of ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide and nitrogen dioxide.

DATA SOURCE: U.S. Environmental Protection Agency, AirData Air Quality Index Report

Housing Affordability

Percentage of homeowners and renters in the Pittsburgh MSA paying 30 percent or more of their annual income for housing



DATA SOURCE: U.S. Census Bureau American Community Survey one-year estimates

2014 to 2015, however, falls short of matching the 5.2 percent increase nationwide.

Both housing values and rent have risen steadily in recent years. From 2005 through 2014, the median value of owner-occupied housing in the Pittsburgh MSA increased 22 percent. And from 2005 through 2015, the average local fair market rent for a two bedroom rose 23 percent, U.S. Housing and Urban Development data suggest.

One measure of affordability is the share of their income that people pay for housing. HUD considers homeowners and renters whose housing costs consume more than 30 percent of their annual income to be cost burdened and at risk of not being able to afford other necessities.

The good news is that fewer homeowners and renters in the region are paying more than 30 percent of their income for housing than 10 years earlier. Among renters, however, the rate remains high: Nearly 46 percent spent 30 percent or more of their income on housing in 2014.

Health

The trend among residents of the Pittsburgh MSA who rate their health as fair or poor is not encouraging, although the picture is incomplete. The rate increased from 14.6 percent of the adult population to 16.6 percent from 2003 through 2012, the last year U.S. Centers for Disease Control Behavioral Risk Factor Surveillance System data were available.

In its 2011-12 Quality of Life Survey, UCSUR found that 12.4 percent of Allegheny County survey respondents rated their health as fair to poor, compared to 21.6 percent in the other six counties in the MSA.

More encouraging are infant mortality trends in the region's urban core. Rates of infant deaths have decreased since 2003 in Allegheny County, where infant mortality has historically been high.

The sharpest decline is seen in African American infant mortality rates. But racial disparities remain. Despite the downward trend, the rate of infant deaths experienced by African American families was 2.7 times

higher than that of white families in 2012, according to the most recent data reported by Allegheny County Health Department.

Crime

When Pittsburgh rises to the top of various "best places to live" lists, one indicator often cited is the region's relative safety as measured by crime rates, which typically are among the lowest of U.S. metropolitan areas.

Rates of violent crime dropped 20 percent from 2003 through 2014 in the Pittsburgh MSA and property crime fell by more than 24 percent, according to FBI Uniform Crime Reports.

However, disproportionately high crime rates are found in certain neighborhoods, and minorities and low-income residents tend to be more vulnerable to crime than others in the region. For example, African Americans in the Pittsburgh MSA are nearly three times more likely than other races to report having been a victim of a violent crime, according to the Pittsburgh Regional Quality of Life Survey conducted by UCSUR.

Social equity

Throughout southwestern Pennsylvania, hardships fall more heavily on some than on others. Who carries the heaviest burden is often defined by race and income.

For example, household income disparities in self-reported health are significant: 19 percent of Pittsburgh MSA residents with annual incomes under \$25,000 rate their health as fair or poor compared with 6 percent of those earning \$75,000-\$99,999 and 5 percent of those earning more than \$100,000, the UCSUR quality of life survey found.

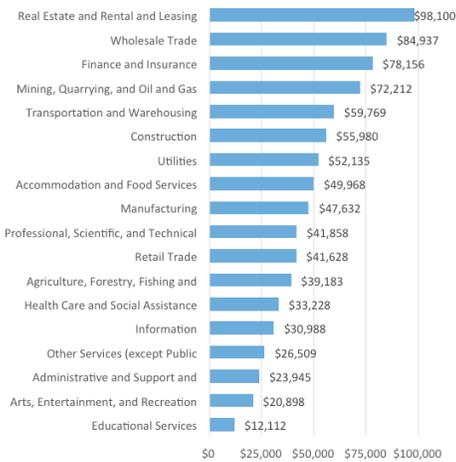
Low-income households are the most likely to have housing costs consume more than 30 percent of their income and jeopardize their ability to pay for other basic necessities. More than 82 percent of Pittsburgh MSA renters earning less than \$20,000 face such hardship.

Wide disparity is seen in regional homeownership rates when the race

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Nonemployers in the Pittsburgh Economy

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In Pittsburgh, in 2014, for every 100 wage and salary workers, there were 13 nonemployment establishments. This represented the lowest ratio among these MSAs, with Miami and Atlanta having the highest ratios of nonemployer establishments to wage and salary employment.

Nonemployer business activity is not a separate piece of the regional workforce. Self-employment captured by nonemployer statistics may or may not be an individual's sole source of income. Individual workers can be included in both wage and salary employment statistics, as well nonemployer filings.

Nonemployer statistics do not capture all that is emerging as the gig economy. Some wage and salary employment could capture employment situations that could be characterized as gig employment. Also, informal economy—the part of the economy not reported via tax filings—is not captured by nonemployer statistics.

Overall, the impact of nonemployment in industries is rapidly changing business models and may be the most obvious changes resulting from growth in the gig economy across the broad region. Its impact is increasing. For Pittsburgh, annual growth in nonemployment filings and receipts exceeded regional employment growth in recent years. ■

Sustainability Report Overview

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and ethnicity of owners is considered. Census Bureau data suggest only 5.8 percent of the more than 697,000 homeowners in the region were African American, Asian, Hispanic or other minorities in 2010, although they represented 12.9 percent of the region's population.

African Americans in the region are the only minority workers with average incomes lower than their white co-workers in every industry sector, according to U.S. Census Bureau Longitudinal Employer-Household Dynamics data. African American infant mortality rates are nearly three times higher than rates among whites.

The UCSUR quality of life survey suggests that 26 percent of African Americans in the City of Pittsburgh often or always have

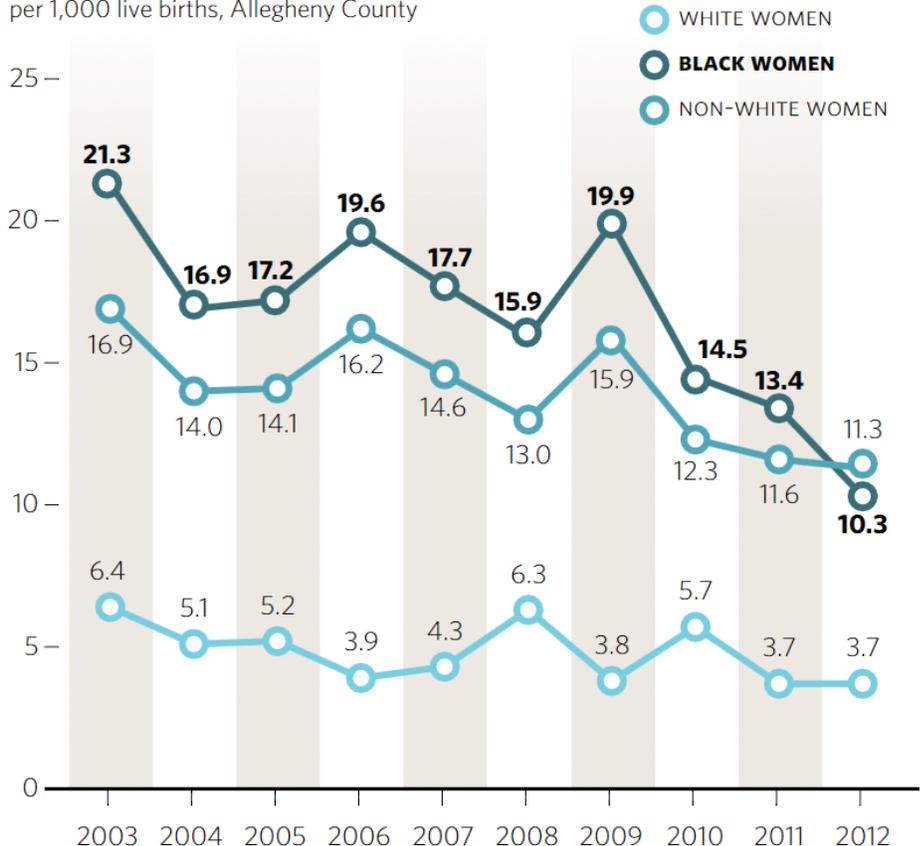
trouble affording basic necessities—something less than 2 percent of other races find to be a problem. African Americans in the Pittsburgh MSA are more likely than residents of other races to skip a doctor visit because they can't afford it. And they are much more likely than others to have been a victim of violent crime.

Such conditions suggest that of the challenges southwestern Pennsylvania faces on the road toward sustainability, none are greater than addressing the racial and economic disparities among the region's population.

The complete *2016 Sustainable Pittsburgh Southwestern Pennsylvania Sustainability Goals and Indicators Report* is available online at sustainablepittsburgh.org/. ■

Infant Mortality

per 1,000 live births, Allegheny County



DATA SOURCE: Allegheny County Health Department, Department of Biostatistics

Data Day

■ by Bob Gradeck and Elizabeth Monk

On October 22, 2016, the University Center for Social and Urban Research (UCSUR) partnered with the Carnegie Library of Pittsburgh to hold the inaugural Data Day at the Library's Main branch in Oakland. Data Day was a day long, drop in event open to the public highlighting the use of data within communities.

The event takes the place of the Data Users' Day Conference held by UCSUR from 2010-2015. We were excited to transition to a more participatory format and to partner with the Carnegie Library to support their work helping residents build skills and confidence using data. We were happy to welcome over 150 participants to our day of activities and demonstrations spread over ten interactive tables located throughout the Library's gallery space.

Since the launch of the Southwestern Pennsylvania Community Profiles last summer (profiles.ucsur.pitt.edu) and the Western Pennsylvania Regional Data Center in the fall (wprdc.org), people have much more information about their communities available to them than ever before. We wanted to use Data Day as a way for data users to share their work with others through conversation and hands-on activities.

The model for Data Day was the "Discovering Technology" or "DiscoTech"

event developed by the Detroit Digital Justice Coalition. UCSUR and the Carnegie Library adopted the guiding principles behind the Detroit DiscoTech events. These principles include: Access, Participation, Common Ownership, and Healthy Communities. As we began to recruit the station leaders and organize the activities, we wanted to make sure that the sessions reflected these principles in some way.

To meet these principles, we encouraged station leaders—recruited from the community—to include participatory activities at their table. A "Show and Play" format was encouraged, where a brief demonstration of an activity was followed by time for the participants to learn in a hands-on way. In some of our activities, this meant making a data visualization on a postcard using markers, flipping through century-old Sanborn and Hopkins neighborhood map books, getting their hands on a drone, or exploring the Southwestern Pennsylvania Community Profiles and the Regional Data

Center's Web sites as part of a data scavenger hunt.

The hands-on activities created an opportunity for conversation between table leaders and participants.

The event also attracted regular library visitors, who found themselves intrigued by the tables and spent nearly an hour interacting with the different station leaders and their activities. Station leaders also took the time to visit other tables as often as they could.

For those interested in learning more about Southwestern Pennsylvania Community Profiles or to set up a training, please contact Liz Monk at: monk.e@pitt.edu

For those interested in the open data platform at the Regional Data Center, please contact Bob Gradeck at: rmg44@pitt.edu

To learn more about the Digital Justice Coalition's guiding principles, please visit the Allied Media projects Web site:

alliedmedia.org/ddjc/principles. ■



Urban and Regional Brown Bag Seminar Series Spring 2017 Calendar of Events

**University of Pittsburgh University Center for
Social and Urban Research (UCSUR)**

Please note new location for this year: 3911 Posvar Hall, 230 S. Bouquet Street
(next to the Hillman Library).

RSVP: swpa@pitt.edu

2017 Spring Presentations

Smart Cities and Sustainability

Friday, January 20, 2017

Grant Ervin, Chief Resilience Officer, City of Pittsburgh.

**Building Community and Ecological
Resiliency through Obsolete
Infrastructure Removal**

Friday, February 17, 2017

Lisa Hollingsworth-Segedy, AICP,
Associate Director, River Restoration,
American Rivers.

**Remaking Post-Industrial Cities: Lessons
from North America and Europe**

Friday, March 24, 2017

Donald K. Carter, FAIA, David Lewis
Director, Remaking Cities Institute,
Carnegie Mellon University.



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3343 Forbes Avenue
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Pittsburgh Today and Tomorrow (Pittsburgh Today 2016)
Integrated Data to Predict Chronic Absence (2015)
State of Aging in Allegheny County (6/14)
Pittsburgh Regional Environmental Survey (2013)
Hilltop Housing Market Analysis (2013)
Report on Undergraduate Withdrawal with an Emphasis on Freshman Withdrawal after the First Term: 2007–08 to 2012–13 (2013)
Marcellus Shale Series (2012-2013)
The Pittsburgh Regional Environment Survey (2013)
The STEM Gap (2013)
Hazelwood Neighborhood Profile 2010 (10/12)
Young Adults Report (8/12)

The Pittsburgh Regional Quality of Life Survey (7/12)
Who Moves to Lawrenceville and Why? (5/12)
Migration Trends in the Pittsburgh Region: Update (12/11)
City of Pittsburgh Neighborhood Profiles—American Community Survey, five-year Estimates, 2005–2009 (6/11)
Incorporating Mt. Oliver Borough's Data in the PNCIS: Project Summary and Lessons Learned (7/11)
Foreclosure in South Pittsburgh's Hilltop and Effective Responses (7/11)
City of Pittsburgh Neighborhood Profiles—Census 2010 Summary File 1 (SF1) Data (7/11)
Allegheny County Health in Black and White, Volume Two, Black Papers on African American Health (8/11)

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University of Pittsburgh

University Center for Social
and Urban Research
3343 Forbes Avenue
Pittsburgh, PA 15260

Phone: 412-624-5442

Fax: 412-624-4810

E-mail: ucsur@pitt.edu

Web site: ucsur.pitt.edu

Twitter: twitter.com/ucsur

Pittsburgh Economic Quarterly Editor

Sabina Deitrick

Assistant Editor

Anna Aivaliotis

University Center for Social and Urban Research

Interim Director

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Urban and Regional Analysis Director

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