



Engaging Detroit

*URC's Contributions to Resurgence
in the Motor City*

Spring 2016

*A Report Commissioned by the
University Research Corridor:*

Michigan State University
University of Michigan
Wayne State University

Prepared by:

Public Sector Consultants

Executive Summary

Overview

Detroit is Michigan's iconic city, with a diverse population and a rich cultural history. Its innovation helped create the auto industry and America's middle class. Michigan's University Research Corridor (URC) is an alliance of Michigan State University (MSU), the University of Michigan (U-M), and Wayne State University (WSU). The URC ranks as one of the nation's top university clusters and is a leading force in Michigan for talent production, academic research, and economic revitalization.

Each year the URC publishes a report as part of its annual sector report series. Started in 2007, this series has focused on documenting the impact of the URC institutions on sectors of importance to the Michigan economy. Past reports have highlighted the alternative energy, life sciences, advanced manufacturing, information technology, automotive, and water (blue economy) industries, as well as the URC's contributions to talent and entrepreneurship. (See Appendix B for a summary of past URC sector reports.) This year's URC sector report focuses on the URC's contributions to the recovery of Michigan's largest city.

The URC has had a long relationship with Detroit and plays a pivotal role in the city's ongoing revival. As the city's seventh largest employer, WSU is an anchor institution in Detroit (City of Detroit 2015). Although WSU has the largest impact, MSU and U-M are deeply engaged in the city as well. URC faculty, staff, and alumni are partnering with city residents and Detroit organizations in hundreds of ways—helping rebuild neighborhoods, improving urban education and public health, and developing the businesses of the future.

This partnership goes both ways. The URC benefits from its access to Detroit, which offers an urban experience with cultural, sport, and entertainment opportunities for students, faculty and staff. The city's business core offers many internship, employment, and business startup opportunities for students and alumni alike.

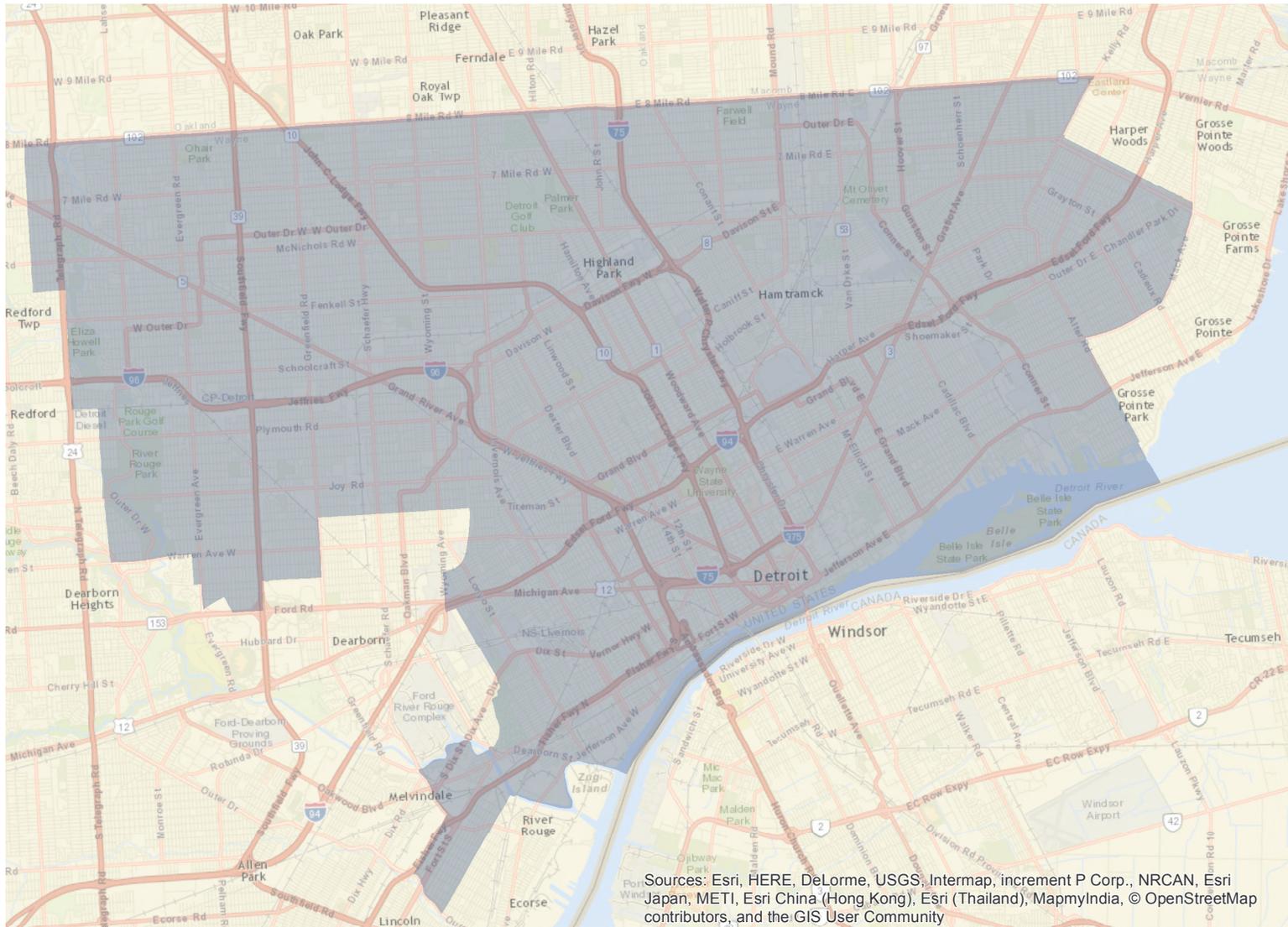
URC Research and Engagement

MSU, U-M, and WSU are all internationally recognized research institutions, and all have a Carnegie Classification of "highest research activity," indicating a high level of both aggregate research activity and research activity per faculty member (Indiana University for Postsecondary Research n.d.). In addition, URC institutions have a "community engagement" classification, which indicates the "collaboration between institutions of higher education and their larger communities...for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (New England Resource Center for Higher Education 2016).

Research conducted by faculty and students is part of the URC's larger engagement in the city. Researchers studying how to improve urban education are actively working with Detroit students, teachers, and school leaders. Researchers studying urban issues are helping Detroit organizations redesign and develop neighborhoods. URC programs are training community organizers and city leaders. Detroit entrepreneurs can launch their businesses with the help

Between 2010 and 2014, the URC had 762 research grants related to Detroit

City of Detroit



of URC incubators and programs. Medical students are treating Detroit residents with the latest technology.

Between 2010 and 2014, the URC had:

- 762 research grants related to Detroit, including:
 - 428 grants researching the city and its associated policy issues
 - 334 grants for medical research occurring in the city
- Total Detroit research spending of \$263 million

This report identified more than 300 URC programs and initiatives in Detroit. These programs include:

- 25 programs related to the arts
- 27 programs aimed at economic revitalization
- 73 community-building programs, including initiatives aimed at strengthening neighborhoods and developing city leaders
- 41 community service programs
- 95 programs aimed at improving the delivery of education in Detroit
- 66 public health programs

Community Building

The URC is helping revitalize Detroit through community building, perhaps best exemplified by the extensive work WSU has done to revitalize Midtown. This includes efforts to increase the number of students and staff who live on and around campus and programs such as a significant investment in the WSU police department, whose officers are commissioned by the Detroit Police Department, and use of CompStat, a data-driven approach to reducing crime. These efforts have paid off—crime in Midtown is down dramatically, retail is flourishing, and the residential occupancy rate is more than 97 percent.

U-M and MSU also have programs aimed at community building. These programs shape the future leaders of Detroit through fellowships at the university's policy schools and citizen training provided through programs like MSU Extension. URC programs are helping Detroiters build strong neighborhoods, communities, leaders, and government institutions. In short, the URC is helping to develop the people and institutions that will drive the revitalization of the city.

Community Service

While there are clear signs of an economic renaissance in Detroit, it remains a high poverty city. Many residents are struggling with issues associated with this poverty: high crime, blighted neighborhoods, struggling K–12 education institutions, and a lack of economic opportunity. URC students, faculty, and staff are partnering with Detroiters to address these challenging issues.

MSU Extension runs a variety of programs aimed at improving nutrition and increasing the availability of fresh foods in Detroit. WSU's Wayne Cares program is a university initiative that brings together students, faculty, and staff to perform charitable work in the community. The U-M Detroit Partnership is a student-run nonprofit that coordinates one-time and weekly service-learning opportunities. This partnership has supported a wide range of volunteer activities, including tutoring, mentoring, crisis counseling, and a one-day service-learning project in Detroit that attracts more than 1,000 students.

Economic Revitalization

Strong economic development is essential to securing Detroit's future. Programs such as TechTown Detroit are helping to drive future economic development. TechTown, created by WSU in partnership with General Motors and the Henry Ford Health System in 2000, offers business incubation support to startup firms. Through this and other programs, the URC helps new entrepreneurs meet the challenges of getting a fledgling business up and running—which includes finding financing, marketing, and a distribution network. For example, the MSU Product Center, a statewide program, is helping Detroit food entrepreneurs commercialize, produce, package, and distribute their products.

Detroit was selected to host two of the seven centers of excellence developed under the National Network for Manufacturing Innovation (NNMI), in part due to the URC universities' expertise in engineering and in part due to the proximity with manufacturing research and development occurring in Southeast Michigan. The NNMI is an initiative focused on coordinating public and private investment in emerging advanced manufacturing technologies. Both the Lightweight Innovations for Tomorrow (LIFT) center, operated by the American Lightweight Materials Manufacturing Innovation Institute (ALMMII), and the Institute for Advanced Composites Manufacturing Innovation (IACMI) will bridge the gap between applied research and product development.



DetroitDerek Photography (Kerry Farr).

Education

Detroit faces many of the problems common to high-poverty urban school districts. The URC is engaged in numerous efforts aimed at improving teaching in Detroit and helping students directly, including the training of teachers and school leaders. Programs that bring students to campus better prepare them for the college experience and position them for success in STEM (Science, Technology, Engineering, and Mathematics) careers.

The URC is a powerful engine for economic mobility. The URC takes students who grew up in poverty and gives them the skills that command high wages in the workplace. A recent Bridge Magazine analysis examined the earnings of low-income students 10 years after entering school and found that among 35 universities in Michigan, the URC schools ranked first, third, and fifth in earnings for these students after enrollment (French 2016).

URC's Economic Impact on Detroit

By purchasing goods and services in the city, the URC serves as a powerful economic engine; it also adds to the infrastructure of Detroit through construction. Many URC students, faculty, and staff live, work, and study in the city; URC alumni living in Detroit also contribute to the economy through purchases and tax payments.

In 2015, the URC's economic impact on Detroit included:

- \$958 million in new economic activity, which is made up of:
 - \$421 million in operations and capital spending
 - \$194 million from the spending of faculty and staff
 - \$140 million from the spending of students
 - \$204 million from URC alumni living in Detroit
- More than 8,000 faculty and staff working in Detroit
- A total contribution of more than 11,600 jobs
- More than 28,000 students being educated in the city
- More than \$10 million in Detroit tax payments

Conclusion

Detroit faces many challenges going forward, and overcoming these challenges is important not just to the city, but to the entire state. Detroit is a large city with significant issues that URC cannot simply solve. However, the URC is making a big difference, and is helping Detroit build on its momentum. Some URC work focuses on one resident or business at a time, such as WSU medical students working to treat Detroit's homeless population or the MSU Product Center working with Detroit food entrepreneurs. Other work builds up Detroit organizations and institutions—like how U-M's Community Scholars program is developing a new generation of neighborhood and city leaders. The URC's impact is both personal and broad, with the URC contributing more than \$950 million in new economic activity in the city and more than 11,000 jobs, and all three schools working to improve teaching and learning in Detroit schools. The URC has a long history in Detroit and is committed to helping the city achieve long-term success.



*In 2015, the
URC's economic
impact on Detroit
included:*

*\$958 million in
new economic
activity*

*A total
contribution of
over 11,600 jobs*

*Over 28,000
students being
educated in the
city*



*More than \$10
million in Detroit
tax payments*

*Over 8,000
faculty and
staff working in
Detroit*

Introduction

Overview

The URC ranks as one of the nation's top university clusters and leads Michigan in the areas of talent production, academic research, and economic development. It enrolls more than 139,000 students and 629,000 URC alumni live in Michigan. In 2014, the URC had an estimated \$2.1 billion in research and development expenditures (Rosaen and El-Kilani 2016).

Detroit is Michigan's largest city. Long a manufacturing powerhouse, the city has fallen on hard times. For decades, the city has seen a slow erosion of its manufacturing base and its population, which has become increasingly impoverished. Detroit's struggles culminated with the city filing for bankruptcy in 2013.

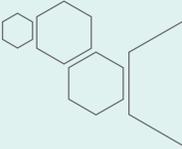
Now that the bankruptcy has been successfully resolved, there is a new optimism in the city. While the challenges of the city remain profound, signs of revitalization have now taken a firmer hold. Thousands of new workers have relocated from the suburbs to downtown. Apartments in Midtown are close to full occupancy. New retail options are appearing, and the city is once again viewed as a good location to start a business.

The URC has deep ties to Detroit. WSU is the only major research university entirely located in the city, anchoring the Midtown area. Each day, it brings thousands of faculty, staff, and students into the city. Its work to improve public safety around campus and encourage students and staff to live in Midtown has revitalized the area—crime in the area is down, and WSU is recognized as one of the 50 safest large campuses in the United States (Archambault 2016). WSU is helping to rebuild Detroit's entrepreneurial climate and business base with efforts like TechTown and the Integrative Biosciences Center (IBio). U-M and MSU also have a physical presence in Midtown and are engaged with Detroiters across the city. All three schools are working to improve the delivery of public education in Detroit; all three assist current city leaders and have programs to develop the leaders of the future; and all are working to rebuild the entrepreneurial climate that once built Detroit into an economic powerhouse in the early 20th century.

While Detroit has struggled, it remains a city with outstanding cultural, entertainment, and sporting opportunities. Its rich history and diverse population, its strong business core, and an emerging startup culture are all assets valued by URC students and staff who want access to the benefits that a big city can bring. As the revitalization continues to take hold, Detroit is becoming increasingly attractive to young professionals who sense opportunities in Detroit that they cannot find in other cities.

The Importance of Detroit to Michigan's Future

It is impossible to overstate the pivotal role Detroit plays in Michigan's economic future. Cities are the key driver of future economic growth and prosperity. Young, highly educated workers, innovators and entrepreneurs alike want to live and work in vibrant cities. Companies will locate in areas where they have access to a talented workforce. Talented individuals want to live in thriving cities, and Michigan needs Detroit to thrive so it will once again become an excellent center of innovation.



MSU Community Music School—Detroit

More than a pleasant distraction, music is important to children.

Listening to it and creating it makes life richer, and research shows that music benefits child development and academic achievement (Catterall 2014). But in the city that gave the world the Motown sound, exposure to music isn't a given—schools facing budget pressure often cut art and music programs. Many low-income families cannot provide access to music education for their children.

The MSU Community Music School-Detroit (CMS-D) helps bring music to children and families close to where they live, providing high-quality, affordable music education and music therapy clinical services. Enrollment has been growing rapidly since the program began in the 2009–2010 academic year. In 2014–2015, 983 people enrolled in onsite classes and camps, with an additional 214 children participating in free offsite sessions.

The program provides subsidized music lessons so low-income families can pay \$5.00 or less per weekly lesson. Students can use instruments at no charge through CMS-D's "Lonely Instruments in Need of Kids" program.

Angela Bowen brings her 11-year-old son, Ronald, to CMS-D for music lessons. "The Community Music School has been an amazing program for



my family," she said. Her oldest son, Anthony, also took lessons there and is now a freshman at MSU thanks to his experience with the CMS-D Jazz Camp.

"Not only are the lessons affordable, but you can borrow the instruments for free," said Ms. Bowen. "This has allowed my younger son to learn a number of different instruments." Ronald has learned to play the trumpet, saxophone, and guitar through CMS-D.

Programs such as Early Childhood Music and Pre-Aspiring Musicians expose younger children to music. The Aspiring Musician Program provides one-hour group lessons for most instruments, and lessons include ensemble playing, music theory, and history. For teens, Spartan Youth Jazz

is taught by highly regarded local jazz artists. The MSU Community Music School-Detroit also offers summer day camps and bands for adults and mature teens.

More recently, CMS-D has formed a partnership with the Marshall Mathers Foundation—established by the rapper better known as Eminem—and Dearborn-based work apparel manufacturer Carhartt. Called Verses, the program is reaching out to Detroit students aged 12 to 15 to develop literacy through words and song. The program, free to those accepted, helps students learn the arts of songwriting, composing, performing, wordsmithing, mixing, and recording using the latest technology.

Detroit is Michigan's best shot at having a world-class city with the talent to match—the type of talent that will make Michigan a top state for income growth, economic development, and job creation. While other Michigan cities are important economic hubs, Detroit is different because of its scale. With a population close to 700,000, Detroit is more than 3.5 times more populated than Michigan's second largest city, Grand Rapids. Approximately 40 percent of Michigan's population is located in the city and the surrounding metropolitan area.

Home to more than 115,000 schoolchildren, Detroit also holds a crucial role in developing the state's workforce (Coalition for the Future of Detroit Schoolchildren 2015). These children represent more than 7 percent of the state's future workers. Educational success in Detroit will be pivotal to ensuring that Michigan has the workforce it needs to grow in the future.

Role of the URC in Detroit's Revival

The URC has a long-standing relationship with the city and is an important partner in its revival. Its extensive economic activity contributes more than 11,600 jobs and more than \$958 million to Detroit's economy, which is helping to support the city's resurgence.

This contribution reaches beyond jobs and economic activity, however. The URC engages with Detroit and its residents in hundreds of ways. In education, there are programs aimed at helping teachers and administrators and programs that work directly with Detroit students. In health care, the URC does cutting-edge research and delivers care directly to city residents. The URC operates community building programs that train residents to be community leaders and organizers. Detroit is a big city with big problems that the URC cannot simply fix. However, the URC is leveraging the efforts of Detroiters who are working to fix the city themselves; sometimes one person, one block, or one neighborhood at a time, and sometimes much more broadly. Through teaching and research, volunteer work, business incubators, and many other efforts, the URC is working to help make Detroit once again a great American city.

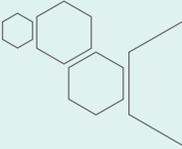
Report Outline

This report highlights the ways the URC and Detroit are engaged, and the economic contribution the URC makes to the city. The report is organized into the following sections:

- ***Detroit, Its Institutions, and Why They Matter***—Discusses Detroit's history, where it currently stands on its road to recovery, and how universities can help revitalize urban areas
- ***URC Research and Engagement***—Explores the hundreds of ways the URC and the city are engaged
- ***URC's Detroit Economic Impact***—Highlights the important economic contribution the URC makes to Detroit's economy

Detroit Stories

Throughout this report, we have included specific, in-depth looks at some of the URC's work in Detroit. These vignettes help illustrate the true impact of the URC's engagement efforts in a way that a simple cataloging of programs cannot.



Revitalizing Detroit Neighborhoods, One House at a Time

While thousands of people have exited the city of Detroit, thousands have also stayed. Those who remain often have a strong commitment to bringing the city back to life.

“I have an investment in the city,” said James Thomas, Morningside neighborhood resident, minister, and entrepreneur. “My heart is in the city. I want to leave a legacy for my children and my children’s children.”

Dana Hart, who lives in the Northend and is board chair of the Northend Christian Community Development Corporation, worries that if she doesn’t learn about real estate investing, many in her community might be priced out of the market, given its proximity to downtown and Midtown.

Opportunities are everywhere in Detroit. You just need to know where to look, and more importantly, how to seize them. Peter Allen, a lecturer at U-M’s Ross School of Business and Taubman College of Architecture and Urban Planning, as well as a full-time real estate developer, is helping residents reclaim their city. He is volunteering his time to teach Detroiters how to buy and fix abandoned homes, and rent them. It’s a strategy for long-term growth and community stability.

Allen calls Detroit “one of the most undervalued big cities in the world, with billions of dollars of real estate opportunity.” But this isn’t a “get rich



quick” scheme. It’s a grassroots effort to bring back neighborhoods and provide residents with the tools they need to wisely invest in their city.

“I’m going to help you not just buy and sell your house one day, but learn how to help build a lively, walkable neighborhood,” Allen told his students.

The classes are filled with Detroit residents eager to learn and invest in their community. They target six Detroit neighborhoods that are part of the Skillman Foundation’s Good Neighborhoods program: Brightmoor, Chadsey-Condon, Cody Rouge, Northend Central Woodward, Osborn, and Southwest Detroit.

“Skillman is making money available for home improvements, so we are working to marry those efforts,” said

Sonia Harb, project manager at the U-M School of Social Work’s Technical Assistance Center.

With guidance from Allen and three former U-M students who act as mentors, the Detroit courses walk residents through the development and financing options for a rehab strategy, using real-life examples and scenarios. The first class’s final project focused on a house that a class member already had purchased and was interested in remodeling for a rental unit. The second session investigated a potential mixed-use development investment. The class members are excited to put into practice what they have learned, and classes will continue this year.

Detroit, Its Institutions, and Why They Matter

Overview

Detroit's motto could not be more fitting. Although it originally spoke of the city's hopes following an 1805 fire that nearly destroyed it entirely, the motto seems particularly well suited for a great American city that is being reborn after falling on very hard economic times. Detroit still faces significant challenges. Much of its population is impoverished, much of the land in the city is vacant, and the city's recovery is nascent. But there is no denying the change occurring in the city. There is a growing sense of optimism. Long-vacant downtown office buildings have new tenants. Talented young people are moving into the city, bringing new energy to the downtown area, as well as neighborhoods like Midtown and Corktown. There are stories of people moving from Brooklyn to Detroit to take advantage of the city's low cost, urban vibe, and the sense of getting in on the ground floor of an economic and urban resurgence (Conlin 2015).

Industrial Beginnings

Detroit was founded as a fur trading outpost, but it is manufacturing, not fur trading, that has defined Detroit on a global level. The start of the 20th century saw an explosion of creative energy, talent, and production that accompanied the birth of the auto industry. The innovation and prosperity that surrounded the development of the auto industry is in some ways similar to what we see in Silicon Valley today (Cohen 2013).

The rapid growth of the auto industry fueled tremendous growth in the population of Detroit, as people came from all over the country and world to work at high-paying jobs. Between 1910 and 1930, Detroit's population grew by more than 1.1 million, remarkable growth of roughly 50,000 new residents per year for 20 consecutive years. Detroit's population, which was 12 percent of Michigan's total population in 1900, rose to roughly 32 percent of Michigan's population by 1930. This peaked in 1950 at 1.8 million residents, making Detroit the fifth largest city in the United States (U.S. Bureau of the Census 1998).

URC Presence

WSU is a major research university located in Midtown. Its roots are traced back to the School of Medicine, which was originally founded in 1868 as the Detroit Medical College, and united with other schools and colleges to form Wayne State University in 1934. In 2014, WSU had 27,578 students (18,347 undergraduates, 7,201 graduate students, and 2,030 professional students). The Carnegie Foundation for the Advancement of Teaching classifies WSU as an RU/VH (research university, very high research activity); all three URC schools have a Carnegie community engagement classification signifying the sharing of knowledge and resources and collaboration with the surrounding community.¹ WSU is also a member of the Coalition of Urban Serving Universities. Coalition members are working to develop innovative solutions for the communities in which they are based.

¹ MSU and WSU, and U-M Dearborn have this classification for 2015. U-M Flint and U-M Ann Arbor have been recognized with this classification in prior years.

*Speramus meliora;
resurget cineribus*

*"We hope for better things;
it will arise from the ashes."*

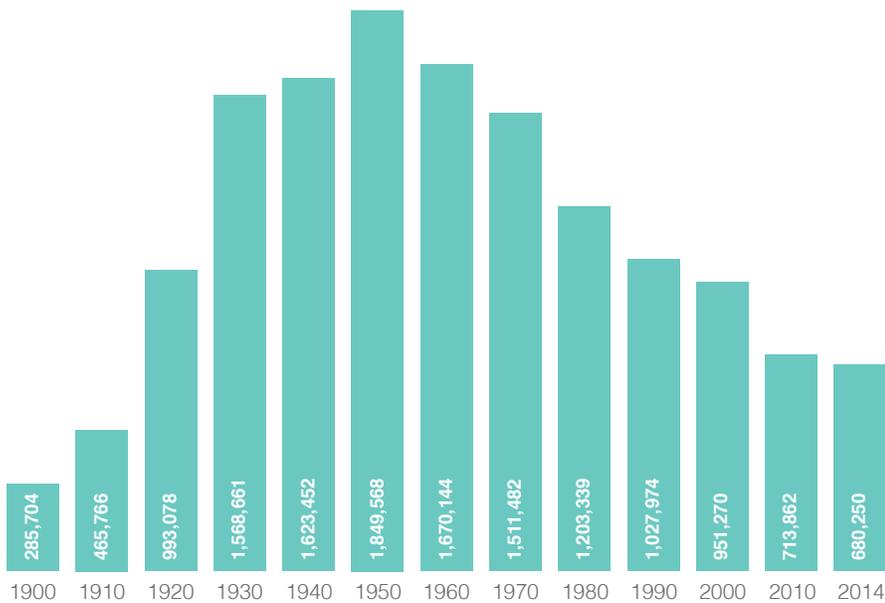
— City of Detroit motto

WSU has 13 schools and colleges, offers more than 380 academic programs, and has more than 2,700 faculty members. Its main campus has 94 buildings spread over 169 acres, and its medical campus has 10 buildings covering 25 acres. Main campus buildings cover more than 10.8 million gross square feet. TechTown, a WSU-affiliated nonprofit business incubator and accelerator, covers 12 blocks and 43 acres. WSU's six residence halls and apartment complexes house nearly 3,000 students. Although the vast majority of its teaching and research occur in Detroit, WSU also has extension centers in Warren, Harper Woods, Clinton Township, Farmington Hills, and Livonia (WSU 2015).

WSU recently completed its Integrative Biosciences Center (IBio), a 207,000-square-foot facility that features wet and dry laboratories, faculty and common areas, and clinical space. The facility is dedicated to eliminating the health disparities experienced in the city. It will house faculty with expertise in environmental sciences, bio and systems engineering, and other health disciplines. It is strategically located near TechTown to help the facility move new technologies from the laboratory to the public (WSU 2016b).

U-M was founded in Detroit in 1817, although the university moved to Ann Arbor shortly thereafter. Both U-M and MSU have a physical presence in the city. Since 1917, MSU Extension has been serving the people of Detroit. Founded in 2005, U-M's Detroit Center is a 26,000-square-foot facility located on Woodward Avenue. The facility serves as a hub for students and faculty working in Detroit and provides space for meetings, lectures, and exhibitions. MSU's Detroit Center, founded in 2009, is located in Midtown in a 22,000-square-foot facility. This facility also serves as the hub for students and faculty working in the city, houses the MSU's Community Music School-Detroit, and serves as an important base for College of Education staff and students working with Detroit schools.

EXHIBIT 1. Population of Detroit



Source: Bureau of the Census, U.S. Department of Commerce.

Detroit's Decline

Detroit's population peaked in 1950. Widespread car ownership and better roads made it easier for workers to live farther from factories, and better transportation systems and lower transportation costs allowed manufacturing facilities to be located farther apart from one another, and made it easier to operate outside of high-cost urban centers. As a result, after 1950 Detroit, like many U.S. cities, saw both its population and its manufacturing base moving to the suburbs. Over the next 40 years, Detroit lost roughly 1 million residents.

The decline in manufacturing jobs that started in 1950 continued into the 21st century, and Detroit's remaining population became increasingly impoverished. In 2008, just 55 percent of Detroit's population was in the labor force, compared to 64 percent for Michigan as a whole. Per-capita income was just 59 percent of Michigan's and approximately one in three residents lived in households with income below the federal poverty line. The population exodus left Detroit with many vacant and abandoned houses. There were an estimated 81,754 vacant housing units, 22 percent of the housing stock, in 2008 (Citizens Research Council of Michigan 2010). The median sale price of a house in Detroit in 2009 was just \$7,000 (Gopal 2009).

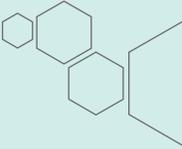
As might be imagined, the population loss and rise in poverty led to severe fiscal pressure on city government. This pressure was exacerbated by significant cuts in revenue sharing payments from the state to the city and by poor financial management. Detroit filed for Chapter 9 bankruptcy protection in December 2013. The city could no longer provide the services needed for the health and safety of its residents, while meeting all of its legacy financial obligations.

Recovery

Detroit's bankruptcy was difficult and painful, but it gave the city a fresh start. Crushing debt and legacy costs were greatly scaled back, and the City is projecting that it will run a small budget surplus in 2015 (Dolan 2015).² The bankruptcy was well timed with the start of a municipal economic revitalization. For a while in the second half of the 20th century, cities appeared to be declining in importance—reductions in transportation costs and improvements in technology seemed to diminish the importance of people and businesses living in close proximity to one another. Between 1960 and 1980, the share of the U.S. population living in cities was falling. However, that trend has now reversed and cities are again attracting workers and businesses. This attraction is due in part to the productivity gains cities can provide. In *Making Cities Work*, Robert Inman (2009) describes this phenomenon this way: "...new technologies have made cities even more attractive places for work and play. Efficient production in the new economy seems to require more, not fewer, personal interactions....The recent evidence suggests that most of the benefits of proximity are realized within one mile or less."

Although Detroit is still losing people, there are signs that the population is beginning to stabilize. Some neighborhoods are gaining residents, and demand for rental units far exceeds supply in the neighborhoods of Midtown, Corktown, and downtown (Reindl and Gallagher 2014). Many neighborhoods face significant struggles and continue to lose population, but the revitalization of these three neighborhoods is an important first step.

² As of February 2016, Detroit had not yet published its official financial statements for FY 2015.



Addressing Health Disparities in Detroit: Wayne State University's IBio Center

Studies have documented disparities in disease occurrence and health outcomes among non-white and economically disadvantaged populations, including higher death rates from cardiovascular disease and greater incidence of diabetes, asthma and obesity. These disparities are often acute in urban areas, and Detroit is no exception.

Wayne State University has been working to address these disparities through its research and community engagement for many years. Researchers such as Dr. Sylvie Naar-King, Dr. Phillip Levy and Dr. Julie Gleason-Comstock have focused much of their work on addressing behavior change, illness management, better patient screening and hospital discharge procedures to address asthma, obesity, hypertension and heart failure rates among Detroit residents.

The university's most recent investment in addressing health disparities in Detroit is the new Integrative Biosciences Center (IBio).

The \$93 million facility, located in Midtown on a previously abandoned 2.7-acre city block, is Wayne State's largest construction project to date.

The building includes laboratories, faculty offices, common areas, a clinical research center, Henry Ford Health System's bone and joint research program and biomechanics motion laboratory, and the Center for Urban Responses to Environmental Stressors. The building's open design fosters collaboration among researchers, and was constructed to minimize environmental impact. It has achieved a Leadership in Energy and Environmental Design (LEED) silver rating.

IBio houses faculty researchers who are searching for ways to eliminate health disparities in the surrounding community. In addition to the researchers already at work, Wayne State plans to recruit more than 30 new faculty members from around the country for research and community engagement programs at IBio. The university estimates that IBio will bring in nearly \$40 million of new earnings annually in Michigan, 98 percent of which will be in metropolitan Detroit.



Wayne State recognizes the importance of locating a research facility of this magnitude within the community it serves. According to Vice President of Research Stephen Lanier, "IBio was designed not only to give researchers world-class lab space but, more importantly, to engage broadly with the communities that we serve through prevention, education and partnering".

The hope is that the discoveries made at IBio can be applied not only to the surrounding Detroit community, but other urban areas as well.

"Rarely does a university get to live its vision and mission on a scale of this magnitude," said Wayne State University President M. Roy Wilson. "The Integrative Biosciences Center embodies what it means to be a public, urban research university — creating and sharing knowledge that contributes immensely to improving the quality of life for its surrounding community. Research conducted in this center will also have important applications in other urban communities around the world."

Businesses are starting to view Detroit as an important place to invest as well. The return to Detroit began in 2003 when Compuware moved its headquarters from Farmington Hills to Detroit. Quicken Loans followed suit in 2010 (Rietow 2014). The Quicken Family of Companies now employs more than 8,000 workers in the city. Blue Cross Blue Shield moved 3,000 workers to downtown from Southfield in 2012. Since 2006, an estimated \$6 billion worth of real estate projects have been built in the greater downtown area (Haglund 2013).

The Role of Universities in Urban Revitalization

Overview

While Detroit's recovery and revitalization is underway, it is still early in the process. The URC will be a key partner to the city as this revitalization continues to unfold. Substantial literature confirms the role of universities as anchor institutions and the impacts urban universities have had in revitalizing urban areas surrounding their campuses. Universities make neighborhoods safe and vibrant,

lead important community initiatives, and help to attract restaurants and retail. They assist with community planning. And of course, university spending makes an important contribution to the economies of cities. CEOs for Cities and Initiative for a Competitive Inner City (ICIC) completed a study 15 years ago that showed that the nation's then-1,900 urban-core universities spent almost \$140 billion on salaries, goods, and services a year—nine times the federal direct spending in urban areas (ICIC and CEOs for Cities 2000). As urban universities have increased their level of engagement with cities over the last two decades, this economic impact has likely increased.

As important as universities are for urban revitalization, safe urban neighborhoods, restaurants, retail, nightlife, and the rich cultural opportunities cities provide make it easier for universities to attract students and top faculty.

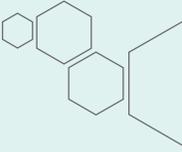


Photograph by Lars Kjølhed Christensen, Flickr.

There are several good examples of successful engagement by universities in urban revitalization across the United States, including University of New Orleans/Tulane University (New Orleans), Arizona State University (Phoenix), Syracuse University (Syracuse), University of Pennsylvania (Philadelphia), Harvard University (Boston), University of Pittsburgh/Carnegie Mellon (Pittsburgh), Ohio State University (Columbus), and Duke University (Durham), to name a few.

Many of the examples studied are large urban areas that have experienced significant decline in the second half of the 20th century—particularly former industrial cities along the east coast or Midwest. While these universities' investments in revitalization have generally been focused on their host cities, there are many ways these revitalization efforts mirror how the URC is currently engaged in Detroit.

> Continued on pg. 11



Beyond Beautification

An attractive flower garden sits where vacant houses once stood, replacing blight with beauty for the entire community to enjoy. What appears to be a neighborhood beautification project is actually much more. It's an effort to utilize available resources to help manage the city's stormwater.

Utilizing research conducted by researchers at U-M, UM-Dearborn, and WSU, U-M faculty and partners are conducting a pilot project that turns vacant land into neighborhood bioretention gardens designed to capture and hold stormwater, while also beautifying the Cody Rouge neighborhood. The four bioretention gardens were built where the basements of demolished houses once were. The vacant basements were excavated and redesigned to accommodate drainage pipes, stone and gravel topped with soil, and beautiful shrubs and flowers to create a system that captures stormwater from the street.

During periods of heavy rain, Detroit's sewer system can become overtaxed, forcing the release of stormwater and sewage into waterways. These innovative gardens help to absorb excess stormwater and allow it to slowly soak back into the ground, reducing the pressure on the sewer system and helping to keep neighborhood streets clear.

The project demonstrates how vacant properties can become green infrastructure that enhances neighborhood quality of life, while improving water quality in the Detroit River and the Great Lakes, said project leader Joan Iverson Nassauer, a professor of landscape architecture at the U-M School of Natural Resources and Environment.

The first bioretention gardens took physical shape in summer 2015, with many contributors to the project's development and construction, including the Detroit Water and Sewerage Department; the Detroit Land Bank Authority; the Cody Rouge Community Action Alliance; the Warrendale Community Organization, Tetra Tech, and Toolles Contracting Group.

"I am overjoyed when I look at these projects and think about what they're doing," said Palencia Mobley, deputy director/chief engineer at the Detroit Water and Sewerage Department. "One thing that we have in this city is land... being able to make that land productive is going to be an amazing benefit for us in the future."



University of Michigan/SNRE.

A three-year Erb Family Foundation grant to the U-M Water Center is allowing Nassauer's team to assess the performance of the Warrendale bioretention gardens, monitor the acceptance and understanding of those structures by neighborhood residents, and develop new green infrastructure design concepts tailored specifically for use in Detroit. Researchers hope these gardens can inspire similar projects in other neighborhoods and cities.

"I do think these projects have the ability to inspire hope," Mobley said. "They reinforce a message to residents: We haven't forgotten about you. You're important. You matter."

Overarching Findings

Universities have varied approaches for engaging with their communities on urban economic revitalization. There is a primary distinction between university engagement that is led by academic parts of the universities (i.e., departments and faculty) versus engagement that is led by the highest levels of university administration (i.e., president or provost). There are also differences in the types of investment or engagement, including those universities that have predominately focused on real estate and infrastructure investments, and those focused on both physical and social changes in their cities. There have been successes with each of these approaches, but three universities we examined in greater depth—Syracuse University, Ohio State University, and University of Pennsylvania—all had strong and active support from their respective leaders, and have invested in both infrastructure and social programs in tackling urban revitalization.

In evaluating the experiences of these universities, some common themes emerged:

- **Leadership matters.** Notable past leaders Ohio State President Gordon Gee, Syracuse's Chancellor Nancy Cantor, and University of Pennsylvania's President Judith Rodin played vital and strong leadership roles in setting the agenda for university engagement with their communities. Each set the direction and tone for the entire university, and ensured that university resources (purchasing, real estate, research, and outreach) were allocated to revitalization efforts. In each case, they created or appointed a high-level administrative coordinator to implement the university's economic development strategy.
- **Building trust is essential.** "Town and gown" relationship issues between universities and their host cities have been historically common and are well documented. The reasons for these tensions are numerous, and both universities and cities play a role in these issues. However, beginning in the 1980s, university officials began to better understand that their institutions' fates were strongly tied to the economic health of their surrounding city. With this recognition, university leadership in Syracuse, Columbus, and Philadelphia focused their early engagement efforts on substantive community engagement in order to overcome distrust associated with past actions (e.g., expansion efforts that displaced residents or holding vacant real estate that contributed to blight).
- **Cities (and neighborhoods) must be willing to strategically partner on planning and economic development.** In these three successful models, each city's leadership was willing to be an active part of the collaboration, dedicate resources where they could, change planning and zoning requirements where necessary, be open to bold ideas, and work at all staff levels to implement joint strategies for economic development and urban renewal. For these universities to feel comfortable with major investments in their city's economic development, they needed to see that their host city was willing to focus their resources and attention as well.
- **Universities should leverage their significant purchasing power.** Universities that have changed their purchasing policies to prioritize local spending—including the three we examined for this analysis—have infused their local communities with significant economic activity. The result has been job and business growth, as well as business attraction, in the surrounding cities and neighborhoods. When coupled with job training and entrepreneurial support, there has been even greater economic and social impact.

- **Investing in physical and infrastructure changes is great, but investing in social change as well is even better.** In all three cities, the universities not only collaborated with the cities to invest in real estate redevelopment, placemaking improvements (e.g., façade upgrades, recreational offerings, public art), they have also had significant engagement by academic departments and individual faculty members on social welfare and health improvements, including community programs, educational improvements, housing incentives, and job training programs.

The URC's Role in Detroit's Recovery

The URC engagement in Detroit follows this framework. Institutional leadership at URC universities has set the direction for engagement in the city that builds community trust through a responsible approach that emphasizes partnered activities with resident organizations and leaders. The URC universities recognize their local impact through their collective purchasing power and investments in infrastructure improvements.

The revitalization of Detroit is built directly into WSU's strategic plan, which states "through its commitment to research and community engagement, Wayne State will continue to be recognized as a leader in Detroit's revitalization and will grow its reputation for understanding and addressing urban challenges" (WSU 2016i).

URC efforts similar to the ones undertaken in these three examples are detailed throughout this report. Public safety in Midtown has been greatly improved through WSU's efforts, such as the expanded capacity of WSU police department. WSU has invested \$3 million into the QLine project, a public-private partnership building a modern 3.3 mile streetcar circulator system running along Woodward Avenue, connecting the Central Business District, Midtown, New Center and North End and enabling population and economic growth in adjacent neighborhoods. WSU joined the Detroit Medical Center and Henry Ford Hospital in the Live Midtown program, which provided their employees with rental and down payment assistance. The program has attracted and retained more than 2,000 residents since 2011. WSU also has more than 3,000 students living on campus in residence halls and apartments. Improved safety, intentional efforts to attract and support local businesses, and the increase in Midtown's population has helped to spur the development of the area's retail sector.

The URC is building the future leadership of Detroit through programs such as WSU's Detroit Revitalization Fellows, U-M's David Bohnett Public Service Fellowships, and MSU Extension. WSU's Detroit Orientation Institute teaches business leaders and others more about the city. The URC trains residents to be community organizers, policymakers, and organization managers and administrators. URC students volunteer throughout the city helping the city and Detroiters in thousands of ways.

The URC is helping to rebuild Detroit's economy through efforts like MSU's Product Center, WSU's TechTown, Blackstone LaunchPad, and the partnership with the Lightweight Innovations for Tomorrow (LIFT). URC students intern at Detroit businesses and provide consulting services to startups and nonprofits. University spending in Detroit and the spending of employees and students also makes a significant economic contribution.

Improving Detroit's schools is an important next step in the revitalization efforts, and all three universities are deeply engaged in these efforts, working to improve teaching and learning, and provide programming to help Detroit students successfully transition to postsecondary learning opportunities.

URC Research and Engagement

Research Activity

MSU, U-M, and WSU are all internationally recognized research institutions. The URC conducted \$10.2 billion in research and development from 2010 to 2014, according to a URC analysis of NSF HERD Survey data. Analyzing 33,960 active research grants during this five-year period, we identified a significant number of URC research conducted on Detroit-centric topics. This research tends to blend with engagement in the city. Faculty doing research in education, urban planning, social work, and public health all apply this research directly to the challenges facing the city and its citizens.

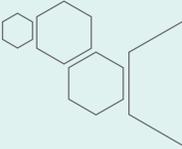
Extensive medical research is conducted by the URC in Detroit and the URC teaches medical students at Detroit hospitals. This medical teaching and research provides Detroiters with access to cutting-edge care. For example, WSU researchers at the Barbara Ann Karmanos Cancer Institute are developing new ways to treat and cure cancers, providing patients with access to the latest, most promising treatments.

Over the past five years (2010-2014), the URC conducted \$263 million in Detroit-centric research and outreach. Utilizing institutional awards data, we identified off-campus research and outreach projects that were conducted in the city of Detroit, and on-campus research focused on Detroit residents and issues, the outcomes of which would impact the people of Detroit. Identified projects spanned a diversity of disciplinary fields, and included medical research occurring within the city. Research looking at Detroit and Detroit-centric topics represented 428 of these grants and \$67 million in spending. Medical research represented 334 grants and \$196 million in spending.

The research occurring is part of the larger engagement of the URC in the city. Researchers studying how to improve urban education are actively working with school leaders, teachers, and students. Researchers studying urban issues are also helping the city plan for its future. They are helping to redesign and redevelop neighborhoods and they are teaching Detroiters the skills that will help them rebuild and organize neighborhoods. Medical students are providing needed care to residents and working on broader initiatives to improve public health in the city.

For example, researchers from MSU contributed to a multi-disciplinary Detroit team developing evidence-based solutions for rape kits. Their work helped address a backlog, spurring changes at the local and state levels and creating an effective system that can serve as a national model for other cities. WSU faculty from the Merrill Palmer Skillman Institute studied low-income urban men to identify strategies that help fathers bond with their babies in the early days of the lives of their children. WSU researchers also collaborated with colleagues from U-M and other universities to study the effects of racism as a contributing factor preventing progress in lowering preterm birth and infant mortality among black residents in Detroit. U-M researchers from the Population Studies Center explored the extent to which job loss and parental loss or separation impacted food security among children in low-income Detroit households, and how food assistance program participation and access to a network of local food resources acted as key moderators. And an MSU history professor whose research focuses

Over the past five years (2010–2014), the URC conducted \$263 million in Detroit-centric research and outreach



Air Quality

Industrial production has been a cornerstone of Detroit's economy, but this production can create challenging health issues. The city struggles with some of the state's highest rates of asthma and cardiovascular disease. U-M's School of Public Health is working with several Detroit-based organizations to change that.

With a \$2.8 million grant from the National Institute of Environmental Health Sciences, U-M public health researchers have partnered with academic peers and Detroit community organizations to form Community Action to Promote Healthy Environments (CAPHE), a collaborative initiative to help improve air quality and resident health in Detroit.

Using an approach that engages community and academic partners together in all phases of the research process, and building on 15 years of community-academic research partnerships focused on health equity in Detroit, CAPHE is gathering data to understand the factors influencing air quality.

"Emissions in Detroit affect populations that are vulnerable, including children and those with existing health issues," said Amy Schulz, professor of health behavior and health education, who is a co-principal investigator.

Findings will spur recommendations for decreasing Detroiters' exposure to air pollutants and, thus, reducing associated health risks. In January, CAPHE submitted research findings to the U.S. Environmental Protection Agency and Michigan Department of Environmental Quality related to the Marathon Petroleum Company's request to increase sulfur dioxide emissions at its oil refinery in Southwest Detroit. The nine-page document included 15 data-driven findings about the projected health impact of increased emissions for Detroiters.

"Air pollution has long been a community concern in Detroit," said Guy Williams, president and CEO of Detroiters Working for Environmental Justice and CAPHE Steering Committee member. "We have coal combustion, incinerators, an oil



refinery, steel mills, truck traffic and other contributors that impact air quality. These types of emissions are linked to asthma, cardiovascular disease, and low birth weight, all of which are dangerous to our health. I'm very glad to see some of the team's research already being used to help address real-world public health problems in the city."

In addition to driving policy change in Detroit, the partnership's collaborative research approach—and forthcoming public health action plan—also will serve as a model for similar communities across the U.S. The initiative may also have broader environmental policy implications, including recommendations for reducing exposure to roadway pollutants that could impact the nearly 40 million Americans living within 300 feet of a four-lane highway.

"This effort has been a long time coming," said Angela Reyes, executive director of the Detroit Hispanic Development Corporation and CAPHE Steering Committee member. "It will surely benefit our communities for years to come."

on the history of Mexicans in the United States completed a documentary entitled “Detroit Tenochtitlan,” which reflects upon the origins, history, and significance of Rivera’s frescoes in Detroit, as well as the turmoil and adverse conditions faced by Mexican/Latino families in the Great Lakes region during the Great Depression.

EXHIBIT 2. URC Detroit Research Grants (millions of \$)

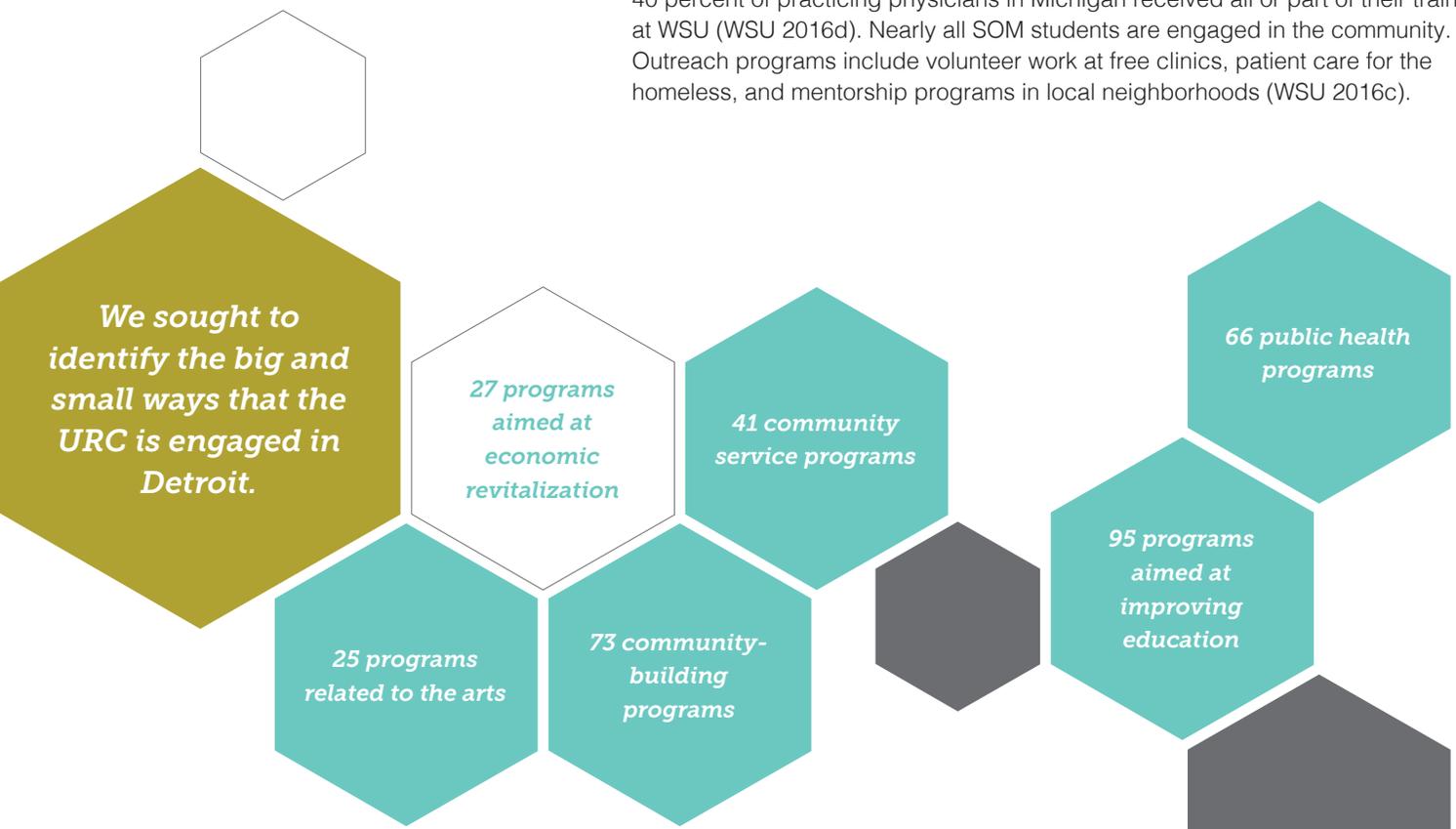
	Grants	2010	2011	2012	2013	2014	2010–2014 Total
Detroit-centric Research	428	\$9.5	\$13.5	\$14.7	\$14.3	\$14.8	\$66.8
Medical Research	334	\$36.0	\$38.7	\$37.4	\$45.7	\$38.7	\$196.5
Total	762	\$45.5	\$52.2	\$52.1	\$60.0	\$53.6	\$263.3

Source: Grant data provided by the URC and PSC calculations.

Medical Research and Training in Detroit

The city of Detroit benefits greatly from URC medical school facilities. WSU’s School of Medicine (SOM) is located in the city, and each year the SOM educates more than 1,000 medical students and awards more than 400 master’s degrees and Ph.Ds in basic science. The SOM works to improve the health of Detroiters in a variety of ways. The SOM’s Center for Urban and African American Health seeks “new ways to redress health disparities by identifying preventative strategies and therapeutic approaches to chronic disease that affect this population, namely obesity, cardiovascular disease, and cancer.” In addition, WSU faculty provide approximately \$150 million in uncompensated care annually (WSU 2016c).

WSU’s SOM provides benefits not just to Detroit but the state as a whole. Nearly 40 percent of practicing physicians in Michigan received all or part of their training at WSU (WSU 2016d). Nearly all SOM students are engaged in the community. Outreach programs include volunteer work at free clinics, patient care for the homeless, and mentorship programs in local neighborhoods (WSU 2016c).



MSU's College of Osteopathic Medicine maintains a site at the Detroit Medical Center (DMC), where each year more than 100 osteopathic medicine students take their first and second year coursework. The college partners with Ben Carson High School to mentor students, provides volunteers for human services programs in the city, and works with the Community Health and Social Services Center to provide health care access to underserved and uninsured populations. The college also works with MSU's College of Nursing at the DMC in an accelerated second-degree BSN program. MSU's College of Human Medicine Department of Family Medicine is in the city researching the genetic effects of war trauma and environmental exposure among refugees from Syria and Iraq. It also is working with Wayne State to assess the environmental health, healthcare access and obesity impact of the QLine light rail project in central Detroit.

Researchers from MSU and the University of Michigan Medical School have partnered with medical colleagues from WSU and Detroit's hospitals to conduct clinical trials and research projects, a great number of which target identification of causes for and potential solutions to remediate health disparities across diverse populations.

The distance between medical research and improved care can be short. A WSU SOM physician is using a successful rapid HIV-testing program as a model for developing hepatitis C screening for patients entering Detroit Receiving Hospital (WSU 2016e). The IBio Center at WSU has innovative technology and collaborative spaces. The design of the facility increases collaboration between researchers and clinicians. By increasing collaboration between researchers at Henry Ford Hospital, the SOM, and WSU's Main Campus, IBio will help to improve the delivery of health care in Detroit (WSU 2016f).

Based in Midtown, the Barbara Ann Karmanos Cancer Institute is a research center dedicated to the prevention, early detection, treatment, and eventual eradication of cancer. Karmanos is one of 45 cancer centers designated by the National Cancer Institute. It provides care for approximately 12,000 patients each year. Every Karmanos basic science researcher and clinician is a faculty member of WSU's SOM (Karmanos Cancer Institute 2016).

Karmanos is conducting more than 700 cancer-specific scientific investigation programs and clinical trials, so Detroiters and other Michiganders have access to the latest cancer treatments and cures. Karmanos emphasizes rapidly moving treatments from the laboratory into patient care. The Institute has six cancer workgroups, representing a collaboration between lab scientists and clinicians who work with patients.

Training in emergency medicine is an important part of medical student education at U-M. The emergency department is playing an increasingly larger role in the evaluation and management of illness and injury. In addition, it provides students with an environment in which they are exposed to a wide variety of pathology and the opportunity to assess the undifferentiated patient. A number of U-M students have arranged to rotate at Henry Ford Hospital in Detroit, along with other hospital across metropolitan Detroit.

Detroit Engagement

The connection between the URC and Detroit is much greater than just jobs and income, and far deeper than just teaching and research. The URC enhances the lives of Detroiters by partnering with the city's residents, institutions, and government to advance the arts, enhance education, build neighborhoods,

improve public health, and aid in economic development. The URC works directly with entrepreneurs, city government, neighborhood leaders, families, and schoolchildren. It helps build leaders and strengthens neighborhoods. It helps entrepreneurs take an idea and turn it into a thriving business. It teaches people how to make their neighborhood safer. The URC's students and faculty and the people of Detroit make art and music together.

The connection to the city is clearly greatest for WSU, since it is located in the city. However, U-M and MSU also have relatively easy access to the city. U-M's Dearborn campus is located just outside the city limits, and U-M runs a free bus to Detroit from its Ann Arbor campus—the Detroit Connector that stops in Midtown and downtown. Travel from MSU to Detroit is easy either by the Michigan Flyer, a privately run bus, or a car ride. The ease of travel helps students feel a connection with Detroit and access its big-city benefits.

While URC students travel to Detroit for entertainment, that is not the only reason they come. Students engage in the city and with its people. Students volunteer in schools, they clean parks, they help build communities. They intern at city businesses and move to Detroit after graduation. Students recognize the dynamic opportunities the city provides, and want to join the people of Detroit in rebuilding the city into something great.

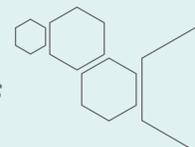
Faculty are engaged in the city as well. Research conducted in Detroit runs the gamut from work to improve the education and learning in Detroit schools, to ways to help children in foster care, to research at the Karmanos Cancer Institute. Faculty and staff teach Detroiters how to lead and organize their community; how to grow fresh fruits and vegetables; how to turn a great idea into a great business; and how to buy and own their first home.

As part of our research, we sought to identify the big and small ways that the URC is engaged in Detroit; we found more than 300 programs, and we are sure this list is not exhaustive. With activities occurring all across the universities through the work of students and faculty, it is impossible to track everything. However, we did identify enough activities to paint a picture of URC and city engagement. In the pages that follow, we provide some additional detail on these activities to help illustrate the many fronts upon which the city and URC have become strong partners. The full list of activities is available on the URC's website, urcmich.org.

These programs include:³

- 25 programs related to the arts
- 27 programs aimed at economic revitalization
- 73 community-building programs, including programs aimed at strengthening neighborhoods and developing city leaders
- 41 community service programs
- 95 programs aimed at improving the delivery of education in Detroit
- 66 public health programs

³ Many of these programs cross categories. For example, URC students volunteering to teach art to Detroit schoolchildren could be classified as art, education, or community service. To avoid double counting, each program was placed in just one category; by necessity, this categorization involved some subjectivity.



Crossroads of Rural and Urban: MSU Extension & the MSU Product Center

For more than 100 years, MSU Extension has been applying cutting-edge research to help better the lives of residents in every corner of Michigan. Originally recognized for its contributions to rural communities, MSU Extension also has been making a difference in the lives of people in urban communities.

Through adaptation of traditional services, MSU Extension provides a number of educational programs uniquely tailored to children and adults living in Detroit's neighborhoods, and maintains a satellite office at the popular Eastern Market.

"The Wayne County MSU Extension office develops programs to reach families in a very direct way through education and exposure," District Coordinator Richard Wooten said. For example, it offers courses that help people learn how to grow and buy nutritious food, improve financial literacy, and even cope with stress.

Generations of Detroit youth have been exposed to gardening, cooking, camping, fishing and other traditional 4-H activities, as well as more contemporary skills including leadership development, robotics, and science, technology, engineering, and mathematics (STEM) education.

Detroit Zoning Board of Appeals Director James Ribbron is a former St. Clair County Extension educator who grew up near the historic 4-H Center in Detroit's north end. He was active in 4-H from the time he was 13 and credits the 4-H Center with keeping him off the streets, exposing him to higher education, endowing him with a deep commitment to serve his community, and teaching him to lead.

"Living in Detroit, I've seen the ups and downs. Now I have a seat at the leadership table. It is hard work at the table, but you can never give up. This is my home and I see the opportunities for Detroit if we recognize our collective resources and work together," he said.

As the city works to eliminate neighborhood "food deserts" and rebuild its business base, it is looking to food entrepreneurs to help fill the gap. The MSU Product Center, another statewide MSU program associated with MSU Extension offers one-on-one business counseling and other resources to assist food entrepreneurs commercialize, produce, package, and distribute their products.

It has held almost 2,000 counseling sessions in Detroit with more than 350 entrepreneurs, helping to create more than 100 jobs and supporting more than \$11 million in investments.

Product Center client Nailah Ellis-Brown of [Ellis Island Tropical Tea](#) represents one entrepreneurial success story. She started out selling tea made with her grandfather's secret recipe from the back of her car. With the help of the MSU Product Center, she now sells her tea at upscale grocery stores throughout the Midwest.

"They gave me that push to become a 'real business' for lack of better words, because when I came to them I was an out-of-my-trunk business and now we're getting ready to be national," she said.



G. L. Kohuth, MSU.

Community Building

Detroit has lost more than one million people since 1950. This population loss, coupled with the steep decline in employment opportunities, has had a staggering impact on many neighborhoods. These once-vibrant neighborhoods now struggle with vacant houses and high crime rates, and the city's revitalization is dependent on the revitalization of these communities. One of the best examples of neighborhood revitalization is the work WSU has done in Midtown, which had a long history as a blighted and high-crime community. That has changed, however, in large part due to the public safety measures that WSU has implemented around its campus.

WSU's police department provides security for the Midtown area providing rapid response times, high-tech security cameras, and a data-driven approach to fighting crime. This approach, called CompStat, is deployed in partnership with WSU's Center for Urban Studies to give officers the ability to visualize crime patterns and do in-depth analysis to develop effective public safety strategies. In addition to leveraging triangulated data to identify hot spots for crime, CompStat engages key stakeholders in weekly meetings, including representatives from WSU, AmeriCorps, local libraries, and private companies. These stakeholders meet to map crimes that have occurred and to develop strategies to help prevent future crimes. From 2008 to 2015, overall crime is down 54 percent in Midtown, and predatory crime including robbery, larceny-auto and auto theft is down 68 percent (WSU Police Midtown CompStat Report – 2008-2015).

In cities, development follows safety and Midtown is no exception. Businesses and residents have flocked to the area. The residential occupancy rate is now more than 97 percent, and young urban professionals consider Midtown a prime residential location (Cowley 2015). Retail establishments, including restaurants, book and record stores, clothing boutiques, and art galleries, have flourished.

WSU's transition from a commuter school to a 24-hour campus was also pivotal in the revival of Midtown. WSU opened its first residence hall in 2002, and it has since opened two more, putting in place more than 1,800 dorm slots for students. WSU has made living in Midtown so popular that it now has a 400-person waiting list for apartments and a 150-person waiting list for residence halls. The addition of thousands of students who remain in Midtown after hours has gone a long way toward revitalizing the neighborhood (Galbraith MJ 2016).

Midtown is obviously a special case, since WSU is physically located in the community. WSU was able to make changes in Midtown that the URC cannot make in other neighborhoods. Rebuilding these neighborhoods will take strong city leadership and engaged citizens, and the URC has programs designed to meet these needs.

Programs aimed at strengthening city leadership include:

- ***The David Bohnett Public Service Fellowship***—This U-M Ford School of Public Policy program embeds top graduate students with an interest in urban policy and the revitalization of Detroit in the mayor's office and the Detroit Economic Growth Corporation (U-M 2016).
- ***Detroit Revitalization Fellows***—This WSU program places mid-career professionals in two-year, full-time positions with organizations working to revitalize the city. Fellows also participate in extensive leadership training. Nearly 75 Fellows have participated in the program since its launch in 2011 (WSU 2016).

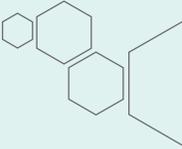
Programs aimed at strengthening city leadership include:

The David Bohnett Public Service Fellowship

Detroit Revitalization Fellows

MSU Extension Center for Local Government Finance and Policy

> Continued on pg. 21



Busting the Myth of Cities as Concrete Jungles: SEED Wayne Feeds an Urban Community

Every Wednesday from June to October, Wayne State University students, faculty and nearby residents look out over a sea of fresh produce — ripe tomatoes, fresh berries, greens, carrots, potatoes and melons — grown on campus and by local farmers. SEED Wayne, founded in 2008, runs this weekly farmers market on Wayne State's Midtown Detroit campus. It is one of several programs SEED offers to improve access for local Detroiters to healthy, fresh food.

The farmers market has been in operation since 2008. Each year, the program solicits Detroit area vendors to participate, including prepared food vendors like Avalon Bakery, Russell Street Deli, Brooklyn Street Local and Sweet Potato Sensations. Vendors accept cash, WIC Project FRESH and Senior Market FRESH benefits, and Bridge Card (the market matches Bridge Card benefits with Double Up Food Bucks). SEED Wayne partners with Gleaners Community Food Bank to sponsor a van that brings residents from several senior housing sites in the city to the market to shop for fresh produce.

“The farmers market environment facilitates bonds within the community that create a sense of ownership. I volunteer with SEED Wayne because I believe it will encourage the development and well-being of our community.”

—Freya Kniaz, Wayne State student

In addition to the farmers market, SEED Wayne leads several other on- and off-campus local food systems efforts. On campus, SEED has three gardens, which produce fruit, vegetables and herbs that are given to food assistance programs or sold at the farmers market. SEED Wayne also runs a food composting program for Wayne State's cafeterias and dormitories. Director Kami Pothukuchi is committed to connecting university research and education in order to improve people's knowledge of local food systems and healthy eating. The program hosts workshops and lectures on sustainable food practices, and students participate in peer-to-peer training events.



Off campus, SEED Wayne partners with related organizations to help develop local food systems in neighborhoods. For example, SEED partners with the Capuchin Soup Kitchen on its Earthworks Urban Farm, a 2.5-acre organic farm in northeast Detroit. The farm has grown over the years to include a 4,000-square-foot passive solar greenhouse that allows food production over an extended season, an apiary, a community orchard and several community garden plots.

Detroit Fresh is an important SEED project. Together with other organizations, it helps get fresh produce stocked in local corner stores. Many of these convenience stores are the only places that sell food within a neighborhood, but have historically sold only processed and “junk” foods. Because they are convenient and accessible for residents and accept food assistance programs, these local corner stores often serve as a regular place for people to buy food. SEED and its partners work with the stores by providing shelves and baskets for fresh foods and connecting the stores with local farmers and produce distributors.

Programs aimed at increasing citizen engagement and community organization include:

Americorps Urban Safety Project

CitizenDetroit

Community Based Initiative Program

Detroit Y-Plan

The Detroit Community-Academic Urban Research Center

MSU Extension

- **MSU Extension Center for Local Government Finance and Policy** – Established in 2015, the MSU Extension Center for Local Government Finance and Policy was created to help communities meet the goals of financial sustainability in a fashion that ensures they economically and culturally thrive. In addition to publishing informative reports on short- and long-term fiscal issues for urban centers, staff experts often consult with municipal leaders. Experts from the Center have been consulting with Detroit’s Chief Financial Officer on tax policy and revenue forecasting since 2011, and coordinate the InnovateGov Internship Program with the MSU Department of Political Science. This MSU-funded program places MSU students, including a number of native Detroiters, in internships with Detroit’s Department of Finance to work on tax compliance and other special projects each summer.

Programs aimed at increasing citizen engagement and community organizing include:

- **Americorps Urban Safety Project**—This WSU program works to promote safety and community in Detroit. The program works with local residents to create block clubs, a forum for residents to get together to work on addressing crime.
- **CitizenDetroit**—Established at WSU in 2012 as a way to educate Detroit residents about critical issues facing the city, this initiative’s goal is to help residents think critically about candidates and emerging political issues so that they can better engage in the political process.
- **Community Based Initiative Program**—This U-M program teaches students committed to social change and community building. Upon graduation, these students become community organizers, policymakers, program planners, organization managers and administrators (Community-Based Initiative in Detroit 2016).
- **Detroit Y-Plan** (Youth-Plan, Learn, Act, Now!)—This WSU program is helping to build equitable and sustainable communities. Y-Plan is a model for youth civic engagement in city planning and policymaking. It is a school-based program that works to engage young people in their schools and communities, and engages young people in urban planning by bringing together university and high school students, teachers, elected officials, and other community members on real-world planning and community development problems (Detroit Y-Plan 2016).
- **The Detroit Community-Academic Urban Research Center**—A collaborative partnership forged in 1995 between U-M and a number of organizations throughout Detroit, the Detroit Urban Research Center helps identify problems affecting the health of residents on the east, southwest and northwest sides of the city. The center also promotes and conducts interdisciplinary, community-based participatory research that recognizes, builds upon and enhances the resources and strengths in the communities involved.
- **MSU Extension**—For 100 years, MSU Extension programs have been bringing the knowledge and resources of MSU directly to individuals, communities, and businesses to build stronger communities and community leadership in Detroit. MSU Extension’s Michigan Citizen Planner helps to train local officials in planning and zoning. Homebuyer education helps residents make more informed choices when purchasing houses, and home preservation and foreclosure classes help homeowners to avoid losing their homes, which in turn helps to strengthen neighborhoods. MSU Extension classes and publications help inform residents on the issues affecting their communities (MSU Extension 2016c).

Community Service

While there are signs of an economic resurgence, the prevalence of poverty is still a major issue in Detroit. Fiscal challenges make it difficult for the city to fully meet the needs of its impoverished population, and many services are provided by nonprofits and the philanthropic community. URC faculty, staff, and students also work to help meet these challenges through formal programming and volunteer work.

Community service work in Detroit includes:

- **Detroit Partnership**—This U-M student-run nonprofit coordinates one-time and weekly service-learning opportunities. This partnership has supported a wide range of volunteer activities, including tutoring, mentoring, crisis counseling, and a one-day service learning project in Detroit that attracts more than 1,000 students. The Detroit Partnership offers programs in the Brightmoor, Southwest, and Eastside neighborhoods (Detroit Partnership 2016).
- **Spanish Language Internship Program**—This U-M program links Spanish-speaking students with community-based organizations. Some students volunteer at health clinics assisting clients with forms, and translating for patients and staff, while other students meet with clients in need of free legal aid.
- **Wayne Cares**—This WSU program brings together students, faculty, and staff to do charitable works in the community. A good example of this work is WSU's Coalition on Temporary Shelter (COTS). COTS works to end homelessness by helping people become self-sufficient and helping them to find affordable housing. It also works to find long-term solutions to the problems of homelessness. Wayne Cares also supports charitable fundraising and other charitable efforts around the city (WSU 2016b).

Access to good nutrition can be a challenge in Detroit, and parts of the city are a food desert. MSU has jumped in to meet this need in a number of ways. MSU food programs in Detroit include:

- **Community Gardens**—MSU Extension has a school and community garden program that trains Detroit Public School teachers in basic gardening, botany skills, and hands-on activities they can use with students. Vegetables harvested in school gardens are served in school cafeterias or sent home with students.
- **Cooking Matters**—This program connects families with food by teaching them how to prepare healthy, tasty meals on a limited budget. Professional chefs and nutrition experts teach Detroiters how to purchase and prepare healthy meals on a limited budget. Courses are offered through senior centers, after-school programs, churches, and income-eligible housing.
- **Project Fresh**— this program provides participants with coupons to purchase locally grown produce at participating farmers' markets.
- **SNAP-Ed**—MSU Extension partners with the Michigan Department of Health and Human Services (MDHHS) to provide educational services to Supplemental Nutrition Assistance Program (SNAP) recipients. The program, known as SNAP-Ed, reduces hunger and food insecurity and promotes healthy eating habits (MSU Extension 2016c).

Economic Revitalization

Economic revitalization in Detroit is essential to securing the city's future, and is important to the state's economic health as well. Detroit residents need good jobs, and the city needs the tax base that strong and growing businesses provide.

> Continued on pg. 24

Community service work in Detroit includes:

*Detroit Partnership
Spanish Language Internship Program
Wayne Cares*

MSU food programs include:

*Community Gardens
Cooking Matters
Project Fresh
SNAP-Ed*

Street Medicine Detroit

Founded in 2012 by WSU medical student Jonathan Wong, Street Medicine Detroit's mission is to provide high-quality health care to Detroit's homeless population wherever they are—in shelters and on the streets. According to Street Medicine Detroit's mission, the intent is to “bridge the gaps between the homeless and medical communities by building relationships and offering companionship and respect.”

“I just wanted to make sure I'm healthy. I got a flu shot and now I'm protected. I'll give you all an A+. Thank you!”

—Irvin Hicks, patient

Each week, medical student volunteers with Street Medicine Detroit make “street runs” in partnership with members of Neighborhood Service Organization (NSO) homeless recovery services to provide medical and related social services to homeless people. NSO provides supervision on “street runs” and medical oversight by a certified nurse practitioner. The student volunteers perform basic health procedures and treatments for homeless patients, such as assessing health history, checking vitals, treating injuries and illnesses, and distributing medication when appropriate. Volunteers receive training in how to work with homeless patients, with an emphasis on engaging with patients in a manner that respects their comfort zones, listening to patient concerns and priorities, and using nonjudgmental language.



“I really like the simplicity of Street Medicine Detroit. We go to the patients and provide the care that they need without any social barriers. It's the essence of medicine, without waiting rooms and billings. Just the patient and clinicians,” said Phil Ison, second year nurse practitioner and student.

Street Medicine Detroit's work is an important part of addressing the city's social and economic needs. Detroit has an estimated 16,000 homeless people. Accessing health care can be challenging for homeless people for many reasons, including cost, distrust of doctors and hospitals, and lack of transportation. They cannot take advantage of Medicaid because it requires a permanent address to verify residency; those that do seek out medical services often use emergency rooms for primary care. A 2014 WSU study found that the cost of emergency

room treatments is about \$1,600 per day for frequent users from the homeless population.

Street Medicine Detroit has won several awards and accolades for its work, including the Michigan Campus Compact Award and the 2015 Dr. Arthur L. Johnson Community Leadership Award from WSU's Office of Government and Community Affairs. The group is run by a leadership team of nearly 30 medical students and professionals, and has more than 400 volunteers. Street Medicine Detroit plans to pursue nonprofit 501(c)(3) status and expand its services in the coming years in order to further its ability to provide needed medical services to Detroit's homeless population.

Cities are powerful engines of economic development and income growth. As Michigan's largest city, Detroit plays a vital role in driving the state's prosperity. Michigan needs to attract and retain young talent if it is to thrive long-term, and a strong and vibrant Detroit will attract talent to the state as a whole. As an industrial center, it is also home to new economic activity through innovation and technology commercialization. The URC universities are working to meet the needs of Detroit's economy by introducing students to career opportunities and connecting research and development activities to businesses.

URC programs aimed at revitalizing Detroit's economy include:

- ***WSU Office of Economic Development***—In 2011, WSU established an Office of Economic Development, a cabinet-level office that works to strategically leverage the university's assets to spur economic revitalization.
- ***National Network for Manufacturing Innovation Centers of Excellence***—Detroit has been selected to host two centers of excellence developed under the National Network for Manufacturing Innovation (NNMI). The Detroit site was selected in part to leverage the engineering expertise of the URC universities and in part due to its proximity with the research and development occurring in Southeast Michigan. NNMI is an initiative focused on coordinating public and private investment in emerging advanced manufacturing technologies. The Lightweight Innovations for Tomorrow (LIFT), operated by the American Lightweight Materials Manufacturing Innovation Institute (ALMMII), and the Institute for Advanced Composites Manufacturing Innovation (IACMI) will be co-located in a 100,000 square foot facility in Corktown. These centers will not only work with OEMs, Tier 1s and material suppliers, but also provide support to local start-ups and small manufacturers to help them scale up new technologies, accelerate technology transfer to the marketplace, and facilitate the adoption of innovation developments across supply chains. Each institute will also act as a 'teaching factory' to build workforce skills at multiple levels and to strengthen business capabilities in large and small companies.
 - ***The Institute for Advanced Composites Manufacturing Innovation (IACMI)***
— An MSU-led collaboration between universities, government entities and the private sector on a large scale, IACMI is bringing cutting-edge, lightweight automotive material development to Detroit. IACMI provides an innovative space where the future of fiber-reinforced polymer composite for automotive manufacturing will be developed and tested for full-scale production.
 - ***Lightweight Innovations for Tomorrow (LIFT)***—A U-M-led collaboration, which includes MSU and WSU as partners, LIFT is charged with moving new technologies in lightweight materials out of the laboratory and into factory production (Pinho 2015). In addition to research and development, LIFT will work to develop the next generation manufacturing workforce in Detroit.
- ***Blackstone LaunchPad***—This WSU program offers career advice, guidance, and resources to young entrepreneurs. The LaunchPad provides students with workshops, networking events, and one-on-one counseling sessions to help them transform their ideas into successful businesses.
- ***BOND Consulting Group***—This U-M undergraduate student organization provides pro bono consulting services to businesses. BOND recruits students from the Ross School of Business, the College of Engineering, and the College of Literature, Science, and the Arts.

Programs aimed at revitalizing Detroit's economy include:

WSU Office of Economic Development

National Network for Manufacturing Innovation Centers of Excellence

Blackstone LaunchPad

BOND Consulting Group

MSU Product Center

TechTown Detroit

- **MSU Product Center**—The MSU Product Center helps food entrepreneurs develop and commercialize high-value, consumer-responsive products and businesses in the food, agriculture, natural resources, and bioeconomy sectors.
- **TechTown Detroit**—TechTown Detroit is the city’s most established business accelerator, offering a full suite of entrepreneurial support services for both technology and non-technology businesses. Founded in 2000 by WSU, Henry Ford Health System and General Motors and incorporated as a nonprofit in 2004, TechTown provides services at its Midtown hub and in neighborhoods throughout Detroit. TechTown’s LABS programs include tech-centric business acceleration, as well as proof of concept, incubation and commercialization services. The DTX Launch Detroit program – part of a programmatic partnership between TechTown, Invest Detroit, the Detroit Creative Corridor Center, the Henry Ford Innovation Institute, NextEnergy and Techstars Mobility, driven by Detroit – is a 10-week summer accelerator for Michigan college students and recent graduates. TechTown’s BLOCKS programs offer small business support services in Detroit’s neighborhoods, helping to launch and stabilize local businesses and catalyze commercial districts. TechTown also operates the Junction440 co-working space and houses numerous high-tech and community serving businesses and nonprofits working across sectors to drive progress in Detroit. In the last eight years, TechTown has served nearly 1,600 companies that created more than 1,200 jobs and raised more than \$120 million in capital.

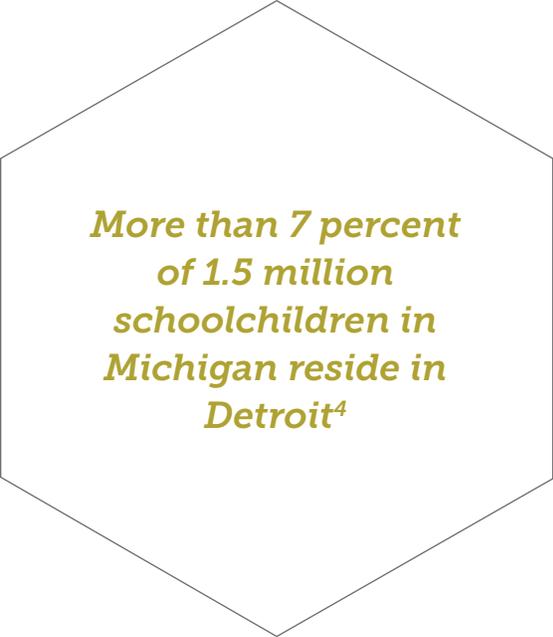
Education

The most pressing problem currently facing the city is the delivery of K–12 education. Good schools are essential for urban revitalization. While young professionals can be attracted to a city with struggling schools, it is very difficult to attract and retain families with children without strong schools. Detroit Public Schools, the city’s traditional school district, educates roughly 47,000 students. Charter schools in the city educate 36,000 children and an additional 26,000 exercise school-of-choice options to attend charter and traditional schools outside of the city (Coalition for the Future of Detroit Schoolchildren 2015).

In total, there are approximately 115,000 schoolchildren in the city, representing more than 7 percent of 1.5 million schoolchildren in Michigan.⁴ There are more than 200 school buildings educating Detroit schoolchildren and only five top the state average in reading and seven in math (Coalition for the Future of Detroit Schoolchildren 2015). Improving the quality of education in Detroit is an urgent need. It is important to students and families, it is important to the revitalization of the city, and it is important to the state as it builds a high-quality workforce capable of attracting and retaining job providers.

There is no quick fix to these problems. The education problems in Detroit are profound, stemming back decades. This does not make the need any less urgent, however. The URC is engaged in helping address these issues in a number of important ways. It is doing work to improve school and building leadership, it has programs designed to improve the teaching in Detroit schools, and it has programs aimed at directly helping students. A sampling of these programs follows.

⁴ This total also includes the 6,000 students attending schools in the Education Achievement Authority.



**More than 7 percent
of 1.5 million
schoolchildren in
Michigan reside in
Detroit⁴**

School leadership programs include:

- **Center for Positive Organization**—U-M Ross School of Business faculty at the CPO are working with a cross-section of administrators, teachers, and leaders to develop a new leadership culture in Detroit Public Schools. This work has allowed administrators to devote more time to teaching and learning and less time to dealing with bureaucratic issues.
- **MI Excel Statewide System of Support**—This MSU program trains, employs, assigns, and evaluates professional facilitators and specialists who support local schools and districts with professional dialogue and diagnostic data analysis. These talented team members help districts identify barriers to student achievement, establish clear priorities, and reallocate human and fiscal resources more effectively.

Programs aimed at teachers include:

- **Broad Future Teacher Scholars**—This MSU scholarship program is available only to graduates of the Detroit Public Schools who pursue a bachelor's degree and teacher certification at MSU. The scholarship is structured in the form of loan forgiveness, and provides financial support to cover the full cost of attendance (tuition, fees, room and board) at MSU. Students who are awarded this scholarship agree to serve in the Detroit Public School system after they complete the program.
- **Good Schools Resource Center**—This partnership between MSU and the Skillman Foundation helps educators learn and implement research-based strategies to improve the quality of teaching and learning in Detroit schools.
- **Urban Educators Cohort Program**—This MSU program helps students gain the skills they will need to be effective teachers in an urban environment. Classes are designed to help future teachers understand the social, cultural, and financial issues faced by students in urban schools.
- **TeachDETROIT**—An innovative teacher education program at WSU's College of Education, TeachDETROIT is designed to prepare new teachers who are interested in teaching in Detroit schools. The college is recruiting both current undergraduate students and candidates with a college degree to participate in the teacher residency program, which kicked off in 2015. The program stresses cultural competence as a prerequisite to working in urban schools, and also prepares teachers for ambitious academic work, particularly in mathematics, with children of color.

School leadership programs include:

Center for Positive Organization

MI Excel Statewide System of Support

Programs aimed at teachers include:

Broad Future Teacher Scholars

Good Schools Resource Center

Urban Educators Cohort Program

TeachDETROIT

Programs aimed at students include:

Code Day

Go-Girls

High Five Program

Michigan Engineering Zone

Summer Enrichment Program

WE READ

Programs aimed at students include:

- **Code Day**—WSU's College of Engineering hosts a computer code day, inviting high school students from throughout the Detroit area to spend the day on campus to learn about coding from volunteers.
- **Go-Girls**—This WSU program increases the competence and confidence of middle school girls in the areas of mathematics, technology, scientific thinking, and communication by engaging them in experiences that promote interest in and awareness of STEM careers.
- **High Five Program**—WSU provides free tutoring in reading and writing skills. Tutors are graduate students completing a master's program in reading, who work under the supervision of faculty in the Reading, Language, and Literature Program.
- **Michigan Engineering Zone (MEZ)**—The MEZ is a safe and supportive forum where Detroit students acquire the knowledge and tools they need to propel themselves to higher education and careers in the STEM fields. Outfitted with computer labs complete with CAD software, a machine shop, robot testing area, and collaborative workstations, Detroit's engineers and U-M faculty, staff, students, and alumni provide training and mentoring within an environment of learning, leadership, teamwork, and fun.
- **Summer Enrichment Program**—This U-M program is a two-week commuter camp designed to take middle school concepts delivered in science, math, and English classes in school and develop them in the minds of the students, so that they begin to identify the connections between their class curricula and the real world, its technology, and its engineering. The program includes a visit to an engineering campus for workshops by the college's students, staff and faculty that focuses on what engineers do.
- **WE READ**—This U-M program works with the students of Noble Elementary-Middle School in Detroit. Its aim is to encourage a love of reading and writing in Detroit's youth, and it is an umbrella organization composed of BEAR and MyBook. BEAR (Be Excited About Reading) involves reading short books with fourth graders and engaging them via fun, book-related discussions and activities. MyBook's focus is on teaching eighth graders how to write and illustrate their own stories, which WE READ publishes at the end of the school year.

Programs aimed at helping Detroit children achieve college success include:

- **College 101**—This three-day U-M residential summer program introduces rising tenth-grade students to higher education through a series of unique experiences on the U-M campus. College 101 prepares students for college, while facilitating exposure to academic disciplines and career options as well as special opportunities available to college students such as study abroad, athletics, and leadership development.
- **HIGH Program**—The Helping Individuals Go Higher program helps financially stressed students at WSU reach their goal to graduate. The program provides resources for students in need, such as housing support, textbooks and other school supplies, clothing, transportation, and child care assistance. The mission of the program is to ensure that no student abandons their dream of earning a degree solely because of housing or financial challenges.
- **Summer High School Scholars Program**—Each year, this MSU program has students from urban school districts spend time on campus. The college

Programs aimed at helping Detroit children achieve college success include:

College 101

HIGH Program

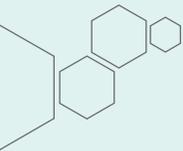
Summer High School Scholars Program

preparation experience includes living in dormitories, taking practice ACT tests and developing skills for writing, studying and using technology. With current MSU students as counselors, participants learn about issues of social justice and what it takes to achieve their dreams—especially in the kinesiology or education fields.

For Detroit students, attending a URC school can be a path out of poverty. The URC provides students with the skills that command high wages in the workplace. A recent *Bridge Magazine* analysis examined the earnings of low-income students 10 years after entering school (French 2016). Among 35 universities in Michigan, the URC schools ranked first, third, and fifth in earnings for these students after enrollment. Through grants and scholarships, the URC schools are a very affordable option, ranking second, third, and 13th least expensive for low-income students, according to *Bridge*.

> Continued on pg. 31





The URC and K-12 Education in Detroit

Growth and vitality of cities is tied to many factors; among the most important is access to high-achieving, quality K–12 schools. But the urban education systems in many cities are struggling. The challenges facing public education in Detroit are well known, and the proposed solutions are highly controversial. And yet, beyond the headlines and public discourse, the business of teaching and learning continues on the ground. Students, parents, teachers, and administrators are seeking ways to move forward.

URC university researchers in education, engineering, business and related disciplines have developed expertise in effective practices for teaching and learning within the urban context. Below are three examples of URC engagement efforts to support K-12 education in Detroit with life-changing results.

Math Corps is expanding the pipeline of students who are mathematically-prepared for college, and is changing lives one cohort at a time. Housed within WSU's Center for Excellence and Equity in Mathematics, Math Corps was founded on the principle that all children have a unique and special greatness that can be realized through hard work and dedication. With support from the Kresge Foundation, WSU, and private donors, Math Corps selects 240 middle school students and more than 120 high school students to participate in its two summer programs each year.

Students love Math Corps. One middle schooler recently said, "We learn something new each day and also have fun at the same time...you get an experience that can't be found anywhere else."



Expanding the Student Pipeline: Wayne State University Math Corps

Since 1992, thousands of Detroit's kids have attended Math Corps at Wayne State University for free each summer. In a city where the high school graduation rate is less than half, more than 90 percent of Math Corps students graduate high school and more than 80 percent go on to college.

Math Corps' Summer Camp and High School Bridge Program offer middle school students instruction from university faculty and Math Corps alumni, some of whom are just removed from the program. As one high school Math Corps student teacher said, "...this year was way better than when I was a (middle school) student...this time, I am the one making a difference in a student's life."

For many Math Corps students, their experience has shaped the trajectories of their educational careers. For example, Omar Pacheco participated as a student, graduated from Cass Technical High School in Detroit, earned an undergraduate degree in mathematics from WSU, and is on track to earn a PhD. Mr. Pacheco was surprised to learn he had the ability to positively impact others when a younger student thanked him for encouraging her. He said, "I never thought that people were actually paying attention to me or that I could influence others that way unintentionally."

The WSU Math Corps Scholarship Fund offers scholarships to undergraduate students who are either former or current members of the WSU Math Corps. WSU also offers the prestigious Presidential Scholarship, which covers tuition for four years, to Math Corps students who meet specific criteria. Joseph "Pops" Ratcliff, a WSU Presidential Scholarship recipient, graduated from WSU and currently teaches math at Pershing High School in Detroit.

Preparing Teachers: A Focus on Urban Education

Committed to creating better opportunities for all people, particularly those living in the most under-resourced areas, MSU College of Education offers a number of programs focused on improving urban education. These programs include graduate and undergraduate teacher preparation, continuing education for urban educators, and outreach efforts to K-12 students in urban settings, many of which bring students from urban school districts to campus each year.

Essential to MSU College of Education's mission to develop effective teachers prepared for success in urban schools is its Urban Educators Cohort Program (UECP), an undergraduate program for freshman and sophomore students. Chris Waston, math instructional coach at Henry Ford Academy: School for Creative Studies exemplifies the success of the UECP. Mr. Waston learned about the UECP while attending a summer scholars program on MSU's campus while still in high school. A graduate of Detroit Public Schools and an alumnus of WSU's Math Corps, Mr. Waston found the UECP coursework very relevant to what he had experienced while attending school in Detroit.

"The UECP really prepared me well to be a teacher in Detroit," said Mr. Waston. "In addition to my coursework, I was able to do work in Lansing Public Schools during the school year. In the Urban Immersion Fellowship Program, I was able to work in Detroit, and learn directly from the educators in the city." Mr. Waston also valued the connections he made with other students dedicated to improving urban schools. While engaged in the Immersion Program, Mr. Waston appreciated weekly meetings with fellow UECP students held at MSU's Detroit Center.

Inspired to Engage: InsideOut Literary Arts Project

Marlin Jenkins asked students how they would describe Detroit. He then asked them how outsiders might characterize the Motor City. The lists, etched on a classroom whiteboard in Detroit's Garvey Academy, were far from uniform. But the exercise opened up a window for Jenkins to discuss metaphor and its use in creative writing.

Welcome to a typical day in the InsideOut Literary Arts Project, Detroit's largest literary arts nonprofit. Since 1995, the nonprofit has led more than 50,000 Detroit youth on adventures using poetry as their guide to becoming better students and ultimately more engaged citizens. The program provides University of Michigan graduate students like Jenkins an opportunity to inspire youth, many of whom are enrolled in Detroit Public Schools, to think broadly, create bravely and share their voices with the wider world.

"The graduate students always bring a positive energy to the classroom and, we believe, take away from our young



Erin Kirkland for iO.

students a new appreciation for the power of words," said Peter Markus, a senior writer with InsideOut and U-M alumnus.

Terry Blackhawk, InsideOut's founder and (retired) executive director, worked with U-M Professor Nicholas Delbanco in 2005 to help launch the Civitas Fellowships program. The program since has provided funding to more than 40 U-M students pursuing a master of fine art's degree in creative writing.

Jenkins is among the numerous beneficiaries of the program. "It's really great to not only be involved in teaching, but also to be involved in the Detroit community," said Jenkins, who attended Garvey Academy as a child.

Four U-M students are selected to participate in the program during the fall and winter semesters. They are paired up and placed in classrooms and afterschool settings throughout Detroit. Through the Civitas program, U-M students have reached more than 1,500 Detroit youth. As coordinator of the program, Keith Taylor helps select and advises the Civitas Fellows.

"Even if some kids are reluctant to write their own poetry, they're actively listening to their classmates," Taylor said. "You go to those classrooms and nobody is bored. They're all paying attention."

Programs enhancing and promoting the arts in the city include:

Art Therapy Workshops

Detroit Medical Orchestra

Detroit Connections

Spartan Youth Jazz

Youth Theatre Fellows

Public health programs include:

Community Action to Protect Health

Connect to Protect® Detroit HIV Initiative

Healthy Environments Partnership

SMILE

Street Medicine

Student Sight Savers

Arts

Detroit has long had a strong and vibrant arts culture. It is the birthplace of Motown and home of the Detroit Institute of the Arts, the Charles H. Wright Museum of African American History, and the Museum of Contemporary Art. It is the home of the Fisher and Fox Theatres and the Detroit Opera House. The John S. and James L. Knight Foundation and the Kresge Foundation support local art projects and artists. URC students benefit from their proximity to Detroit's rich art heritage, and the URC provides programs enhancing and promoting the arts in the city.

These programs include:

- **Art Therapy Workshops**—This practicum opportunity for graduate art therapy students was started as a way to offer low-cost art therapy experiences to WSU students and local families.
- **Detroit Medical Orchestra**—This WSU School of Medicine program explores the connection between music and healing.
- **Detroit Connections**—This series of courses offered through the Penny W. Stamps School of Art & Design at U-M takes students, staff, and faculty from the Ann Arbor campus every week into two partner schools in Detroit to lead weekly art workshops and design collaborative projects with youth. The courses promote engaged and active citizenry, require out-of-the-box creative thinking, and bring together individuals from different backgrounds to co-create and share resources.
- **Spartan Youth Jazz**—This is a program providing weekly jazz instruction to Detroit students at the MSU's Community Music School.
- **Youth Theatre Fellows**—This is a residential youth theatre summer camp based at U-M's Detroit Center. Targeted to students in 8th through 12th grade, the program provides a unique opportunity for participants to immerse themselves into the multifaceted aspects of stage performance.

Public Health

The URC is engaged on a number of fronts to help improve the public health of Detroit residents. Medical students and residents provide health care to Detroit residents at Detroit's major hospitals. URC researchers are currently leading numerous public health and medical research projects in the city. In addition, URC faculty, staff and students in a variety of programs are providing direct care to populations that are traditionally underserved and medically vulnerable.

Public health programs include:

- **Community Action to Protect Health**—This citywide initiative reduces air pollution and improves residents' health. Along with representatives from Detroit community-based organizations, researchers from U-M's School of Public Health meet to understand the factors affecting air quality and are developing an action plan aimed at reducing the effects of air pollution on residents' health.
- **Connect to Protect® Detroit HIV Initiative**—This MSU-led, multi-stakeholder advisory group works to combat the high incidence of HIV/AIDS in specific geographic areas of Detroit.
- **Healthy Environments Partnership**—U-M's HEP is a community-based participatory research partnership with a focus on understanding and

promoting heart health in Detroit neighborhoods. HEP examines and develops interventions to address aspects of the social and physical environment that contributes to racial and socioeconomic disparities in cardiovascular disease.

- **SMILE**—This MSU program is an intervention to improve access to HIV care among newly diagnosed adolescents.
- **Street Medicine**—This WSU program works to ensure access to quality medical care for Detroit’s homeless population. Through direct and regular outreach, they work to build relationships with this difficult-to-reach population.
- **Student Sight Savers**—This WSU program works to promote eye health and awareness among the large medically underserved population in Detroit in Southeast Michigan. Throughout the year, the program hosts screenings at Cass Clinic, churches, and senior centers.



Daily in the Alley, 2014. Photograph by Austin Tierney, Flickr.

URC's Detroit Economic Impact

Overview

In this section, we present an estimate of the URC's economic impact on the city of Detroit.⁵ This impact arises from the many URC students, faculty, and staff who live, work and study in the city. The many URC alumni living in the city also contribute through their spending and the taxes that they pay. The economic impact estimates represent “new” economic activity that would not have occurred in the absence of the URC.

This economic impact analysis models the value of URC-related economic activity, both through a direct effect and a multiplier effect. The URC directly employs people in the city, but it also supports employment indirectly through purchases of goods and services. Spending by university employees and students in the city also supports employment and generates economic activity.

There is a waterfall effect of economic activity that occurs around initial spending. The employees supported by the direct spending purchase goods and services in the city and generate additional employment, and those additionally generated employees also spend money—supporting even more employment and economic activity. These follow-on spending activities gradually decline as spending leaks out of the region, is saved, or is paid in taxes.

An input-output (I-O) model uses a series of multipliers to estimate the total value of these follow-on spending activities. It tracks how spending flows through interdependent industries to meet demand. This analysis uses the IMPLAN (IMpact analysis for PLANning) I-O modeling system to estimate the net new employment and economic activity the URC generates in Detroit. The economic impact is split into the following categories:

- **Direct effect**—The direct employment and spending of the URC in Detroit
- **Indirect effect**—The employment and spending generated in Detroit by URC purchases of goods and services
- **Induced effect**—The effect on the local economy from the household spending of those directly or indirectly employed by URC activity (As these employees spend money in Detroit on local goods and services, the resulting employment and spending generated is the induced effect.)

The URC's direct economic impact in Detroit includes operational and capital expenditures, salaries and benefits paid to faculty and staff living in Detroit, spending of students living in the city, and spending of students, faculty, and staff, commuting into the city. We have also included the incremental income earned by URC alumni living in Detroit in the economic impact analysis. This income represents the higher wages earned by URC alumni as a result of their URC attendance.

Each university provided detail on their purchases of goods and services in Detroit

⁵ The impact estimated in this report is the net increase in economic activity occurring in the city as a result of the URC. This differs from economic contribution estimates, which do not discount economic activity for the amount that would still occur even in the absence of the URC.



and detail on their Detroit capital expenditures. The spending was provided at the vendor level allowing for a detailed model of university spending to be built in IMPLAN. Operational and capital expenditures were analyzed separately in the IMPLAN model.

The URC-related expenditures included in the economic impact analysis are:

- URC operational expenditures paid to Detroit vendors
- URC employee income (for both residents and nonresident commuters)
- URC capital expenditures to Detroit vendors (including construction spending)
- Student spending in Detroit
- Alumni spending in Detroit relating to incremental earnings

The net contribution each of these areas makes to Detroit was calculated separately.

Other Economic Contributions to the Detroit Economy

The URC impacts the local economy in quantifiable ways not captured in this current analysis. Visitors to WSU, including those who attend meetings, conferences, and athletic events, contribute to the local economy through the purchases they make while in Detroit, such as parking, hotel rooms, and restaurant meals. Payments made to local retirees are also not included in this analysis. Research spending occurring in Detroit is not separately categorized in the model, since this spending is captured in the payroll and vendor purchasing figures. Finally, these estimates represent URC spending directly in the city. They do not include economic activity that may leak into the city from direct URC spending in other parts of the state.

Modeling the City of Detroit

To estimate the impact of the URC in Detroit, we built a model in IMPLAN using zip code level data. Since zip codes do not exactly follow city boundaries, only those zip codes that are primarily within the city's boundaries were included. When only a small portion of a zip code fell within the city, that zip code was excluded. For example, zip codes for Grosse Pointe and Redford, which partially enter Detroit, were excluded from the analysis. The zip codes for Highland Park and Hamtramck were included in the Detroit estimation, since these cities constituted less than half the area of their respective zip codes and both are fully contained within Detroit's outer boundaries. In total, 32 zip codes were used to build the area for Detroit.

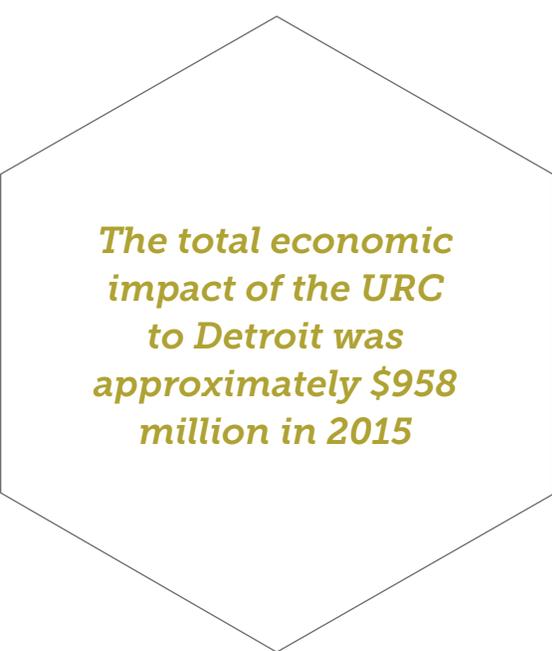
URC Economic Impact in Detroit

URC institutions contributed more than \$1.3 billion (gross) to Detroit's economy during 2015, including direct purchases of \$441 million from Detroit businesses. In 2015, the URC employed 8,327 faculty and staff in Detroit, educated 28,358 students in the city, and had 11,211 URC alumni living in the city.

University purchases and faculty/student spending all significantly contribute to Detroit's economy. However, if the URC did not exist, some of this economic activity would have still occurred. Some students would have attended other schools in Detroit. Some URC staff would have still lived in Detroit, but would have worked for other employers. URC alumni would still have lived in the city, but would likely have earned less, since they would have attended other schools (URC alumni earn significantly more than the graduates of other state universities.)

So in our estimates of the URC's economic impact, we exclude activity that would likely have occurred in the URC's absence. We also adjust the gross contribution for spending in the city for activities conducted outside of the city. After making these adjustments, we find that the URC provided a direct "net new" economic contribution of \$645 million to the city in 2015. This economic activity generated additional activity in Detroit through the multiplier effect discussed earlier. The average multiplier for URC economic activity is 1.48—meaning that for every dollar of direct URC economic impact in Detroit, an additional \$0.48 of indirect and induced economic activity was generated.

Including these multiplier effects, the total economic impact of the URC to Detroit was approximately \$958 million in 2015. The presence of the URC created roughly 11,600 jobs in Detroit, including direct, indirect, and induced employment. The URC generated approximately \$7.1 million in income taxes for the city and \$3.3 million in property taxes.



The total economic impact of the URC to Detroit was approximately \$958 million in 2015

EXHIBIT 3. Total URC Economic Impact in Detroit

Spending Categories	Total Economic Impact (millions of \$)
Operational expenditures	\$240.2
Capital expenditures	\$180.5
Faculty and staff	\$193.6
Students	\$140.0
Alumni Living in Detroit	\$203.8
Total	\$958.1

Analysis by Public Sector Consultants Inc.

EXHIBIT 4. Total URC Employment Impact

Categories	Total Employment (Direct, Indirect, and Induced)
Operational expenditures	511
Capital expenditures	976
Faculty and staff	8,120
Students	1,406
Alumni Living in Detroit*	509
Total	11,603

*This reflects jobs created through the increased spending of the 11,211 URC alumni living in Detroit.

EXHIBIT 5. Detroit Employment Generated by URC

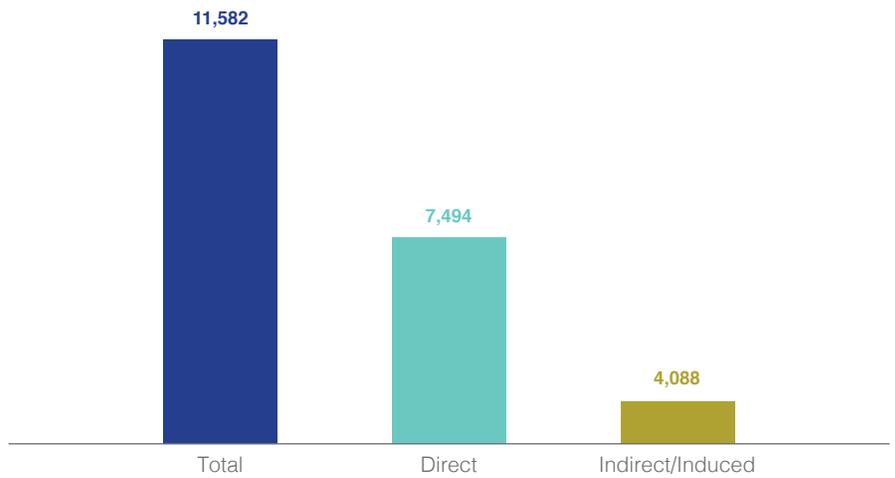
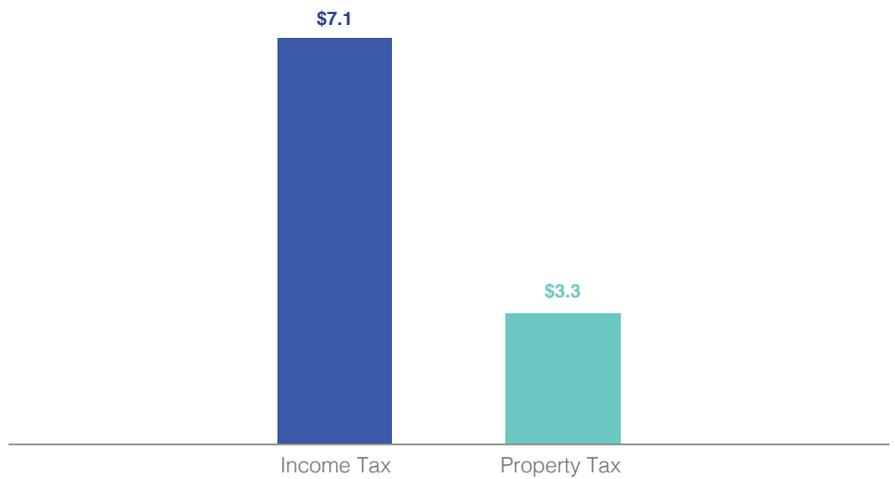


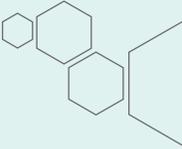
EXHIBIT 6. Detroit Taxes Generated by the URC (millions of dollars)



URC Operational Expenditures in Detroit

In fiscal year 2014-2015, the URC spent \$193 million on nonpayroll operational expenditures in Detroit, representing the purchases of goods and services from vendors in the city. We assume that 90 percent of this spending was “net new” to Detroit, meaning that only 10 percent of this spending would have occurred in the city in the absence of the URC. After making this adjustment and adjusting for the share of economic activity that occurs in Detroit from wholesale and retail trade purchases in the city, we estimate that operational expenditures had a direct economic effect of \$170.8 million.⁶

⁶ The net economic impact for operating expenditures in Detroit was estimated using a hybrid bill-of-goods approach in IMPLAN. For an explanation of this approach and an explanation of the wholesale and retail trade margining used in the estimates, see Appendix A: Detailed Methodology.



Advanced Composite Manufacturing

A collaboration of universities, government entities, and the private sector, the new composite manufacturing scale-up facility, part of the Institute for Advanced Composites Manufacturing Innovation (IACMI), brings cutting-edge, lightweight automotive material development to Detroit. MSU is leading the light-and-heavy-duty vehicle component of the institute, a 122-member consortium funded by a more than \$250 million in private and public commitment over five years, with \$70 million of that total coming from the U.S. Department of Energy.

“Our facility will be unique in the United States because it will provide industry, government, and academia access to production-scale equipment for collaborative composite development programs of real vehicle components. We don’t intend to produce parts, but the facility will provide the opportunity to demonstrate technology innovations at production cycle times,” said Dr. Lawrence Drzal, director of the IACMI Vehicles Technology Application Area and an MSU University Distinguished Professor of chemical engineering and materials science.

Prior to the institute’s launch, companies needed to travel internationally to reach a comparable facility. Now, companies from around the globe can travel to Detroit to develop and demonstrate new materials and manufacturing processes for their commercial potential.

“It is the missing piece of the puzzle in the development of high volume, low cost, advanced composite manufacturing,” said Jan Sawgle, composite program manager for DuPont Performance Materials. “We couldn’t do this type of work in the U.S. before—we were playing catch-up. This facility will help us remain relevant and competitive while bringing more talent into the region.”

IACMI officials are meeting with companies to identify the automotive industry’s greatest needs, like balancing fuel efficiency and style. “Automakers need to solve a lot of challenges in order to build fuel efficient, yet stylish vehicles,” says Gina Oliver, senior director in the Automotive



University Advancement, Michigan State University.

Plastics Division at the American Chemistry Council. “This [Center] is absolutely essential to making that happen.”

Capitalizing on the region’s automotive cluster, the 100,000-square-foot facility co-located with Lightweight Innovations for Tomorrow (LIFT), in Detroit’s oldest neighborhood, will be an innovative space where the future of fiber-reinforced polymer composite for automotive manufacturing will be developed and tested for full-scale production.

“The scale-up facility in Corktown will be very important to Dow and DowAksa (our carbon fiber joint venture),” stated Dan Beattie, Business Director for Government Markets and Lightweight Materials. “It will allow us and our partners to collaborate in better defining, testing and resolving questions about manufacturing processes, materials and their integration.”

The advancement of composite-material research is crucial to the auto industry the state of Michigan. Already more than 100 companies have signed on, and proposals for testing are flowing in from across the country. DuPont has one project approved, and plans to submit additional proposals.

“The institute is going to be another jewel for the city,” says Oliver. “It gives Detroit another opportunity to bring businesses into the city.”

With an average weighted multiplier of 1.39, the total Detroit economic impact from URC operational expenditures was:

- \$240.2 million in economic impact
- 511 jobs

URC Capital/Construction Expenditures in Detroit

The purchase of equipment and software and spending on construction projects is examined separately from operating expenditures to better account for the way these expenditures flow through the economy. Capital expenditures can vary significantly from year to year. In 2015, the URC spent \$247.8 million on capital expenditures, including construction, with vendors in Detroit. In addition, nearly \$50 million was spent on construction activities occurring within Detroit but paid to non-Detroit vendors. The local portion of these expenditures were included in the analysis.

Some construction spending paid to Detroit firms is for projects occurring outside of the city, while some projects within the city were completed by firms located outside of the city boundaries. To properly account for this, we examined individual construction projects and made assumptions regarding the share of economic activity occurring inside and outside the city. We assume that construction projects valued at less than \$0.5 million awarded to Detroit contractors were fully attributable to Detroit. Construction projects by WSU were also assumed to be 100 percent local. For construction projects occurring outside of the city but awarded to Detroit construction firms, we assumed 20 percent of the spending was for administrative costs occurred within the city, and 10 percent of the cost was for construction workers living within Detroit. We also assumed that construction occurring within the city paid to outside vendors has a 40 percent local effect from the purchase of local supplies and/or labor. Using these assumptions, we estimated the direct economic impact of URC capital spending occurring within the city to be \$128 million.

The total economic impact of URC capital expenditures including the indirect and induced effect was:

- \$180.5 million in output
- 976 jobs

Faculty/Staff Expenditures

URC payroll expenditures totaled \$106.2 million for 1,981 university faculty and staff living in Detroit.⁷ The URC has an additional 6,346 faculty and staff who commute to Detroit for work, for a total of 8,327 faculty and staff who work in the city. This total includes medical residents and graduate assistants on the URC's payroll. Faculty and staff employed by the URC but not living in Detroit were modeled separately from those living in the city since resident employees spend a significantly higher share of their income in the city than commuters.

While some faculty and staff would still live in the city even if the URC did not exist, we assume that the URC, particularly WSU, is what attracts these individuals to Detroit. Therefore, we assume that 90 percent of resident employees are living in Detroit because of the presence of the URC. Under this assumption, 1,783 URC employees—with a total payroll of \$95.6 million—both live and work in the city

⁷ Payroll expenditures include wages and benefits.

because of the URC. We also assume 90 percent of commuters are working in the city because of the URC. Under this assumption, 5,711 faculty and staff commute into the city because of the URC, and spend an estimated \$29.3 million each year in the city. Appendix A displays separate estimates for resident and commuter employees.

The total economic impact of faculty and staff is:

- \$193.6 million in economic impact
- 8,120 jobs

Student Spending

Whether residents or commuters, all URC students in Detroit spend money on goods and services within the city and contribute to the total economic impact of the URC. Student spending occurs in the form of rental payments for housing, school supplies, transportation costs, the purchase of groceries, and entertainment.

WSU is located within Detroit and is an anchor institution in the city. Its presence draws in students who would not otherwise attend school in the city. While there are several other colleges and universities in Detroit, their scale and educational focuses do not make them adequate substitutes for out-of-town students. Most URC resident students attend WSU, but students attending other URC institutions also reside in Detroit during the school year, such as those attending U-M's Dearborn campus. We assume that 100 percent of WSU students who were originally from outside of Detroit are in the city because of the URC and that 80 percent of students originally from Detroit are attending college in Detroit because of the URC.

There are 28,335 URC students living in or attending school in Detroit. Some of these students also work for the URC, and the economic impact of these students was included in the employee calculations. Therefore, these students need to be removed to avoid double counting. There were 27,194 net new students in Detroit after adjusting for student workers and students who would have attended school in Detroit even in the absence of the URC.

Total spending was determined based on detailed profiles for students living on or off campus. These profiles were also created separately for graduate and undergraduate students. In total, we estimate that the net new students spent \$274 million in 2015. This student spending does not directly translate into a Detroit economic impact. Much of this spending occurs outside of the city. Regional purchase coefficients were used to determine how much student spending actually occurred in Detroit. Adjustments were made to the local purchasing coefficients of real estate (rental), transit (such as buses), and retail bookstores to reflect student spending more closely. After making these adjustments, we estimate that URC students spend \$97.7 million directly in Detroit each year due to the presence of the URC. This economic activity has a multiplier of 1.43, meaning for every dollar of direct economic impact there is \$0.43 of indirect and induced impact.

Therefore, the total economic impact of student spending is:

- \$140.0 million a year
- 1,406 jobs

Alumni Spending

An estimated 11,211 URC alumni live in Detroit—6,572 with an undergraduate degree, and 4,639 with a graduate degree. Alumni living in the city earned an estimated \$649.1 million.⁸ Most of these earnings cannot be said to be the result of the URC. Many of these alumni were likely to have attended college elsewhere in the absence of the URC. For the purposes of estimating the economic impact to Detroit, we include the portion of alumni earnings that we assume are attributable to their attendance at the URC. To do this, we produce an estimate of the additional earnings these workers have as a result of attendance. URC alumni earn more on average than graduates from other Michigan colleges. We estimate the amount that URC workers earn on average and compare that average to the average Michigan college graduate with the same years of experience, and use that increment when estimating the net economic impact. On average, URC alumni living in Detroit earn 23 percent more than graduates from other universities with a similar degrees and years of experience.⁹

Accounting only for the increase in income alumni receive because they have a URC degree results in a direct effect on Detroit's economy of \$121.5 million, with a total effect of:

- \$203.8 million in economic impact
- 590 jobs supported with the spending resulting from the incremental earnings of URC alumni

URC Tax Payments

Although the URC is exempt from property taxes, it did generate a significant amount of tax revenues in Detroit. The city levies an income tax at a rate of 2.4 percent for residents and 1.2 percent for nonresidents. The URC paid approximately \$400 million in wages to commuting and resident faculty and staff in 2014, generating approximately \$5.5 million in city income taxes. Including indirect and induced economic activity brings the estimated income tax payments resulting from URC activity to \$7.1 million, representing approximately 2.8 percent of total Detroit income tax collections.

The URC is exempt from property taxation. The indirect and induced economic activity of the URC does result in property tax payments, however. In 2014, these property tax payments totaled an estimated \$8.4 million. Only 40 percent of property tax payments actually go to the City of Detroit, however; the State of Michigan, Wayne County, Detroit Public Schools, and other entities also receive shares. Payments to the City of Detroit were approximately \$3.3 million, representing 1.5 percent of city property taxes (City of Detroit 2015).

⁸ The methodology for estimating alumni earnings is detailed in Appendix A.

⁹ See Appendix A.

References

- Archambault, Dennis. January 26, 2016. "How Midtown Became Detroit's Safest Neighborhood." Midtown Detroit. <http://midtowndetroitinc.org/newsroom/latest-news/how-midtown-became-detroits-safest-neighborhood> (accessed: 2/24/2016)
- Arizona State University Design Consortium. N.d. Campus Partners for Community Revitalization. <https://universitydesign.asu.edu/db/campus-partners-for-community-urban-revitalization-1> (accessed 1/16/2016)
- Association of Public Land-Grant Universities. 2014. Economic Engagement Framework: Economic Impact Guidelines. www.aplu.org/CICEPFramework (accessed 1/8/2016)
- Binkley, Collin. February 28, 2015. "Ohio State plans sweeping off-campus development around 15th and High." The Columbus Dispatch. <http://www.dispatch.com/content/stories/local/2015/02/27/development.html> (accessed 1/15/2016)
- Bolt, Chris. October 14, 2015. "Construction Complete on Phase II of Connective Corridor, Officials, SU Hail its Impact." WAER Syracuse Public Media. <http://waer.org/post/construction-complete-phase-ii-connective-corridor-officials-su-hail-its-impact#stream/0> (accessed 2/4/2016)
- Campus Partners. N.d. Campus Partners website. <http://campuspartners.osu.edu/who-we-are/background.html> (accessed 1/22/2016)
- Cantor, Nancy, Peter Englot, and Marilyn Higgins. 2013. "Making the Work of Anchor Institutions Stick: Building Coalitions and Collective Expertise." Journal of Higher Education Outreach and Engagement. 17(3) 17-46.
- Coalition for the Future of Detroit Schoolchildren. March 2015. The Choice is Ours. <https://drive.google.com/a/pscinc.com/file/d/0BzxmybUS-SKuuu3pPWVIMVGNrbG8/view> (accessed 2/9/2016)
- CollegeBoard. 2015. Wayne State University. <https://bigfuture.collegeboard.org/college-university-search/wayne-state-university> (accessed 1/15/2016)
- Citizens Research Council of Michigan. April 2010. The Fiscal Condition of the City of Detroit. Report No. 361. <http://www.crcmich.org/PUBLICAT/2010s/2010/rpt361.pdf> (accessed 11/23/2015)
- City of Detroit. June 17, 2015. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2014. <http://www.detroitmi.gov/Portals/0/docs/finance/cafr/Final%20CAFR.pdf> (accessed 2/8/2016)
- Coalition for the Future of Detroit Schoolchildren. March 2015. The Choice is Ours. <https://drive.google.com/a/pscinc.com/file/d/0BzxmybUS-SKuuu3pPWVIMVGNrbG8/view> (accessed 2/9/2016)
- Cohen, Sharon. July 21, 2013. "Detroit's downfall: Decline of autos, troubled racial history blamed for city's decline." StartTribune. <http://www.starttribune.com/autos-troubles-race-at-root-of-detroit-collapse/216349491/> (accessed 11/23/2015)

- Conlin, Jennifer. July 10, 2015. "Last Stop on the L Train: Detroit." The New York Times. <http://www.nytimes.com/2015/07/12/fashion/last-stop-on-the-l-train-detroit.html> (accessed 11/23/2015)
- Community-Based Initiative in Detroit. 2016. <http://ssw.umich.edu/programs/msw/financial-aid/community-based-initiative-program> (accessed 1/23/2016)
- Cowley, Stacy. February 25, 2015. "How Wayne State Police Helped Breathe Life Into a Blighted Detroit Strip." New York Times. <http://www.nytimes.com/2015/02/26/business/smallbusiness/how-wayne-state-police-helped-breathe-life-into-a-blighted-detroit-strip.html> (accessed 1/23/2016)
- Day, Frances, "Principles of Impact Analysis & IMPLAN Applications"; IMPLAN Group LLC, 16905 Northcross Dr., Suite 120, Huntersville, NC 28078, www.IMPLAN.com.
- Detroit Economic Growth Corporation. N.d. Tax Rates—City of Detroit. <http://www.degc.org/data/uploads/TAXES%202012.pdf> (accessed 2/18/2016)
- Detroit Historical Society. 2015. Timeline of Detroit: French Detroit (1700-1760). <http://detroithistorical.org/learn/timeline-detroit/french-detroit-1700-1760> (accessed 11/23/2015)
- Detroit News. November 7, 2014. "Timeline: Detroit's Road Through Bankruptcy." <http://www.detroitnews.com/story/news/local/wayne-county/2014/11/07/timeline-detroits-road-bankruptcy/18654077/> (accessed 11/23/2015)
- Detroit Partnership. 2016. <http://thedetroitpartnership.org/> (accessed 2/2/2016)
- Detroit Y-Plan. 2016. <http://coe.wayne.edu/centerforschoolhealth/y-plan.php> (accessed 1/23/2016)
- Dolan, Matthew. November 30, 2015. "Detroit on Track After Bankruptcy, Report Says." Detroit News. <http://www.freep.com/story/news/local/detroit-bankruptcy/2015/11/30/detroit-track-after-bankruptcy-commission-finds/76557422/> (accessed 1/25/2016)
- Ehlenz, Meagan. 2015. Neighborhood Revitalization and the Anchor Institution: Assessing the Impact of the University of Pennsylvania's West Philadelphia Initiatives on University City. <http://www.thecyberhood.net/documents/papers/Ehlenz.pdf> (accessed 1/16/2016)
- Ferenchik, Mark and Encarnacion Pyle. April 1, 2013. "OSU campus neighborhoods experience vibrant rebirth." The Columbus Dispatch. <http://www.dispatch.com/content/stories/local/2013/04/01/vibrant-rebirth.html> (accessed 1/12/2016)
- French, Ron. January 26, 2016. "Low-income students soar at some colleges, struggle at others." Bridge Magazine. <http://bridgemi.com/2016/01/low-income-students-soar-at-some-colleges-struggle-at-others/> (accessed 1/26/2016)

- Galbraith, MJ. February 9, 2016. "How WSU and CCS transformed from commuter schools into 24-Hour campus communities." Model D. <http://modelmedia.com/features/wsu-ccs-campus-communities-020916.aspx> (accessed 2/9/2016)
- Gopal, Prashant. March 5, 2009. "What does a \$6,000 home in Detroit look like?" Bloomberg Business. http://www.businessweek.com/the_thread/hotproperty/archives/2009/03/the_median_home.html (accessed 11/23/2015)
- Greene, Jay. December 6, 2015. "Blue Cross to trim \$300 million by 2018." Crain's Detroit Business. <http://www.craindetroit.com/article/20151206/NEWS/312069982/blue-cross-to-trim-300-million-by-2018> (accessed 1/15/2016)
- Haglund, Rick. May 31, 2013. "In Turnaround, Suburbs Lose Business to Detroit After Many Years of Flight." Mlive.com. http://www.mlive.com/news/detroit/index.ssf/2013/05/in_turnaround_suburbs_lose_bus.html (accessed 1/24/2016)
- Hattersley Gray, Robin. May 30, 2012. Podcast: University, Hospital Partnerships Help Cut Detroit Crime. <http://www.campussafetymagazine.com/article/Podcast-University-Hospital-Partnerships-Cut-Detroit-Crime#> (accessed 1/29/2016)
- Health Research Institute. June 2014. Medical Cost Trend: Behind the Numbers 2015.
- Helms, Matt. November 2, 2015. "Housing deals boost Midtown's revival in Detroit." Detroit Free Press. <http://www.freep.com/story/news/local/michigan/detroit/2015/11/01/midtown-incentives-boost-diversity/74014992/> (accessed 2/6/2016)
- Indiana University for Postsecondary Research. N.d. The Carnegie Classification of Institutions of Higher Education, 2015 edition. <http://carnegieclassifications.iu.edu/methodology/basic.php> (accessed 2/1/2016)
- Initiative for a Competitive Inner City. June 2014. Strategies for Measuring the Shared Value of Anchor Institutions. <http://www.icic.org/connection/blog-entry/blog-strategies-for-measuring-the-shared-value-of-anchor-initiatives> (accessed 2/1/2016)
- Initiative for a Competitive Inner City and CEOs for Cities. 2000. Leveraging Colleges and Universities for Urban Economic Revitalization: An Action Agenda. http://www.icic.org/ee_uploads/publications/UIFINAL.PDF (accessed 1/14/2016)
- Inman, Robert P., eds. 2009. Making Cities Work: Prospects and Policies for Urban America. Princeton, NJ: Princeton University Press.
- Karmanos Cancer Institute. 2016. About Karmanos. <http://www.karmanos.org/About> (accessed 2/5/2016)
- Kromer, John and Lucy Kerman. 2004. A Case Study in Urban Revitalization. https://www.fels.upenn.edu/sites/www.fels.upenn.edu/files/West_Philadelphia_Initiatives_A_Case_Study_in_Urban_Revitalization_0.pdf (accessed 1/12/16)

- Michigan State University Extension. 2016. About. <http://msue.anr.msu.edu/about> (accessed 1/23/2016)
- Michigan State University Extension. 2016b. Citizen Planner: Fundamentals of Planning and Zoning. http://msue.anr.msu.edu/events/citizen_planner_fundamentals_of_planning_zoning_zac (accessed 1/23/2016)
- Michigan State University Extension. 2016c. SNAP-Ed. http://msue.anr.msu.edu/program/info/snap_ed (accessed 1/23/2016)
- Muniz, Katherine. March 24, 2014. "20 ways Americans are blowing their money." USA Today. <http://www.usatoday.com/story/money/personalfinance/2014/03/24/20-ways-we-blow-our-money/6826633/> (accessed 2/3/2016)
- New England Resource Center for Higher Education. 2016. Carnegie Community Engagement Classification. http://nerche.org/index.php?option=com_content&view=article&id=341&Itemid=618 (accessed 3/6/2016)
- Ohio State University. N.d. Campus Partners website. <http://campuspartners.osu.edu/> (accessed 1/26/16)
- Pinho, Kirk. January 9, 2015. "Corktown manufacturing institute to open next week." Crain's Detroit Business. <http://www.crainsdetroit.com/article/20150109/NEWS/150109876/corktown-manufacturing-institute-to-open-next-week> (accessed 1/23/2016)
- Reindl, JC and John Gallagher. January 26, 2014. "Downtown Detroit Apartment Rents Spiking Higher, Even Pricing Out Middle Class." Detroit Free Press. <http://archive.freep.com/article/20140126/BUSINESS04/301260081/Rents-rising-Detroit-downtown-Midtown-Corktown#> (accessed 1/26/2016)
- Rietow, Rochelle. April 3, 2014. 7 Companies Putting Detroit Back on the Map. <http://www.helloinnovation.com/blog/7-companies-putting-detroit-back-on-the-map/> (accessed 1/26/2016)
- Riffkin, Rebecca. April 6, 2015. "Americans' Consumer Spending Rises in March to Average \$86." Gallup. <http://www.gallup.com/poll/182297/americans-consumer-spending-rises-march-average.aspx> (accessed 2/3/2016)
- Rosaen, Alex L. and Zeid S. El-Kilani. 2016. Empowering Michigan: Ninth Annual Economic Impact Report of Michigan's University Corridor. Anderson Economic Group. <http://urcmich.org/reports/9th-economic-impact-report/> (accessed: 2/23/2016)
- Salt District. August 2009. SALT District Report. <http://www.saltdistrict.com/wp-content/uploads/2015/09/SALT-Report-2008-2009.pdf> (accessed 2/1/2016)
- Sillin, Nathaniel. "Americans Spend an Annual Average of \$2,746 on Lunch." Practical Money Skills. http://www.practicalmoneyskills.com/personalfinance/experts/practicalmoneymatters/columns_2015/1120_Lunch.php (accessed 2/3/2016)
- Sterrett, Steven. 2009. Planning and Partnerships for the Renewal of Urban Neighborhoods. Journal of Higher Education Outreach and Engagement. Vol. 13, 3-113. <http://files.eric.ed.gov/fulltext/EJ905407.pdf> (accessed 1/27/2016)

- Sugrue, Thomas J. N.d. Motor City: The Story of Detroit. <https://www.gilderlehrman.org/history-by-era/politics-reform/essays/motor-city-story-detroit> (accessed 11/23/2015)
- Swenson, Dave. April 2013. Using IMPLAN to Evaluate Public Universities Regional Economic Impacts. Iowa State University, Department of Economics. Revised May 2014 for the Mid-Continental Regional Science Association and IMPLAN Biennial Meeting, June 4–5, 2014. Madison, Wisconsin.
- Syracuse University Office of Community Engagement and Economic Development (CEED). N.d. CEED Website. <http://provost.syr.edu/ceed/> (accessed 1/22/2016)
- _____. N.d. Syracuse Connective Corridor Website. <http://connectivecorridor.syr.edu/> (accessed 1/25/16)
- TechTown. 2016. TechTown Detroit. <http://techtowndetroit.org/> (accessed 1/23/2016)
- Traub, Paul. August 12, 2015. Detroit Discovery Series: Where is Detroit Right Now? PowerPoint Presentation. Federal Reserve Bank of Chicago.
- University of Michigan. 2016. Bohnett Fellowship. <http://fordschool.umich.edu/bohnnett-fellowship> (accessed 1/23/2016)
- University Research Corridor. August 2014. New Lightweight Metals Institute Will Be Headquartered in Detroit. <http://urcmich.org/newsletters/almiii/> (accessed 1/24/2016)
- U.S. Bureau of the Census. June 15, 1998. Population of the 100 Largest Urban Places: 1950. <http://www.census.gov/population/www/documentation/twps0027/tab18.txt> (accessed 11/23/2015)
- U.S. Census Bureau. 2016. State and County Quick Facts. <http://quickfacts.census.gov/qfd/states/26/2622000.html> (accessed: 2/18/2016)
- U.S. Department of Education. 2016. College Scorecard. <https://collegescorecard.ed.gov/> (accessed 1/15/2016)
- Watkins, Thayer. N.d. The History of the Economy of Detroit. <http://www.sjsu.edu/faculty/watkins/detroit.htm> (accessed 11/23/2015)
- Wayne State University (WSU). 2015. 2014-15 Fact Book. <http://wayne.edu/factbook/factbook2015.pdf> (accessed 1/25/2016)
- WSU. 2016. History. <https://wayne.edu/about/history/> (accessed 1/25/2016)
- WSU. 2016b. IBio Integrative Bioscience Center. Available at: <http://ibio.wayne.edu/about.php> (accessed 1/25/2016)
- WSU. 2016c. School of Medicine: About the School. <http://home.med.wayne.edu/about/index.php> (accessed 2/3/2016)
- WSU. 2016d. School of Medicine: Admissions. <http://admissions.med.wayne.edu/> (accessed 2/3/2016)

- WSU. 2016e. WSU Department of Emergency Medicine Launches Hepatitis C Screening Program. <http://prognosis.med.wayne.edu/article/dr-levy-to-develop-hepatitis-c-screening-program-at-detroit-receiving> (accessed 2/4/2016)
- WSU. 2016f. Investing in Innovation with the WSU School of Medicine. <http://prognosis.med.wayne.edu/article/investing-in-innovation-with-the-wsu-school-of-medicine> (accessed 2/4/2016)
- WSU. 2016g. Detroit Revitalization Fellows. <http://detroitfellows.wayne.edu/index.php> (accessed 1/31/2016)
- WSU. 2016h. Community Outreach & Engagement. <http://communityoutreach.wayne.edu/waynecares/index.php> (accessed 2/2/2016)
- WSU. 2016i. Distinctively Wayne State University. <http://strategicplan.wayne.edu/> (accessed 2/6/2016)
- WSU. 2016j. Cost of Attendance. <https://wayne.edu/financial-aid/resources/cost-of-attendance/> (accessed 1/8/2016)
- Williams, Corey. May 21, 2015. "Whites moving into Detroit, blacks moving out as city shrinks overall." Crain's Detroit Business. <http://www.craigslist.com/print/article/20150521/NEWS01/150529964/whites-moving-into-detroit-blacks-moving-out-as-city-shrinks-overall> (accessed 11/23/2015)
- Wolters Kluwer. N.d. "Survey finds American workers spend an average of \$3000 a year on coffee and lunch at work." Available: <http://www.employment-lawdaily.com/index.php/news/survey-finds-american-workers-spend-an-average-of-3000-a-year-on-coffee-and-lunch-at-work/#sthash.3IFavVms.dpuf> (accessed 2/3/16)

Appendix A: Methodology

Overview

This appendix contains an overview of the methodologies and assumptions used to produce the research and engagement and economic impact estimates. It includes:

- Research Award Methodology
- IMPLAN Model
- Operational and Capital Expenditures Modeling
- Operational Expenditures
- Capital Expenditures
- Employee Impact
- Student Spending
- Alumni Spending
- Tax Impact

Research Award Methodology

To quantify the amount of research that is “Detroit-centric,” we collaborated with URC staff to review research awards data from the URC universities (including all University of Michigan campuses) for projects active from 2010 to 2014.

The team’s working definition for “Detroit-centric” included any research or outreach activity that focused on people and organizations primarily in the city of Detroit. While many activities were physically located in the city, a number of projects extended beyond the city to include surrounding communities. The team used professional judgment to determine if the majority benefit went to Detroit residents. In other cases, the activity was conducted primarily on university campuses, but the focus of the work was on Detroit residents and issues, the outcomes of which would impact the people of Detroit.

The search method was based on the model used in previously published URC industry reports (e.g., Blue Economy), and includes a multitiered search process conducted by several independent researchers. The first tier of the search process includes analysis of recognized search terms—such as “Detroit,” “urban,” and names of Detroit neighborhoods—as well as terms that relate to the challenges facing Detroit—such as “disparities” or “revitalization.” The next tier is reviewing the titles of awards receiving funding from organizations known to support research and engagement in Detroit (e.g., Skillman Foundation). All awards of researchers who had at least one project tagged as Detroit-centric were reviewed, as were all awards supported by funders that received a Detroit tag for at least one award made.

- In many cases, the title of the award provided insufficient information to determine if it was focused on Detroit. For these, researchers investigated the nature of the awards by reviewing available materials, such as dedicated web pages, press releases, grant applications, medical trial applications and calls for participants, and published journal articles.

Reconciliation of independent researchers’ coding of awards was conducted through discussion and review, resulting in a codified list of awards.

Our estimate for the amount of awards active during the 2010–2014 period includes projects that started before 2010 and others that were active after 2014. We allocated the amount of awards that “count” during this period by:

- Dividing the total award amount by the estimated number of days between the award start and end dates listed in the data
- Estimating the number of days in each year from 2010 to 2014 that were between the project’s start and end dates
- Multiplying the average daily amount of the award by the number of days during the target years for which the project was active

This methodology is limited in that it does not account for any systematic variation in spending of research award amounts, such as a tendency to spend down awards more heavily toward the beginning or end of the projects.

IMPLAN Model

The economic impact estimates were generated using IMPLAN (Impact analysis for PLANning). IMPLAN was developed by the U.S. Department of Agriculture in the 1970s and was further developed in the 1980s through a partnership with the University of Minnesota. It is currently owned by IMPLAN Group LLC in Huntersville, North Carolina. IMPLAN uses 536 industry classifications to model the economy. Data are available at the national, state, county, and zip code level. Zip code level data can be aggregated to create regions and cities.

URC institutions provided line item Detroit spending information for 2014–2015. PSC used these data to model the economic impact of the URC on Detroit using a hybrid bill of goods modeling approach (Swenson, 2013). Under this approach, the characteristics of the college and university sector in IMPLAN were modified to match the actual characteristics of URC university spending data. The model's direct coefficients attribute spending across industrial sectors. These coefficients were adjusted to reflect actual university spending.

Margins

Wholesale and retail trade purchases need special treatment in economic impact analysis. Trade margins need to be applied to the purchase price of wholesale and retail purchases.¹ Trade margins identify the share of a sale that stays with the wholesaler or retailer. This trade margin represents the markup value of purchased goods. Adjusting for this trade margin is important, because goods purchased in the city are often not produced there. A significant portion of the purchase price is attributable to production and transportation costs, and these costs should not be included as part of the overall economic impact to the city. IMPLAN provides the trade margins for wholesale and retail industries. These can be used by either building the model through an analysis by parts, or by identifying the trade margins to “deflate” the purchase price of goods to include only the share that actually remains in the region. This analysis deflated the purchase price of retail and wholesale purchases.

Operational and Capital Expenditures Modeling

In total, nearly 1,800 individual URC purchase line items were coded for use in IMPLAN for the operational, capital, and hospital impact estimates. This information was categorized by type of activity for use in the IMPLAN model. In many cases, the vendor name did not indicate the industry of the firm. In these cases, PSC researched the firm to identify the appropriate spending sector. All operational expenditures valued at \$20,000 or greater were coded for analysis. Operational expenditures valued at less than \$20,000 were also coded when the vendor had already been identified or the universities provided information on the appropriate sector. All capital and hospital expenditures were coded for IMPLAN regardless of value. In total, \$285 million of the \$288 million in line item expenses in Detroit were categorized and applied to a sector in IMPLAN.

Once the major IMPLAN sectors were identified, the ratio of operational spending to total spending for each sector was calculated. This allowed the industry impacts to be further tailored to the specific spending patterns of the URC. This process was done for each of the 15 industries with the greatest share of URC spending. The capital expenditure and hospital expenditure models were run using an industry change model that apportioned purchases directly to the appropriate industry.

After balancing the model to allocate any uncategorized URC spending to other sectors, industry multipliers were reconstructed.

¹ For more information on trade margins, visit the Bureau of Economic Analysis website and reference the RIMS II Handbook: An Essential Tool for Regional Developers and Planners. Available at: https://bea.gov/regional/pdf/rims/RIMSII_User_Guide.pdf.

Operational Expenditures

Operational and hospital expenditures were combined for presentation in the report. Exhibit A1 shows these combined direct, indirect, induced and total employment and impact.

EXHIBIT A1. Economic Impact, Operational Expenditures

Impact Type	Employment	Economic Impact (millions of \$)
Direct Effect	N/A	\$170.8
Indirect Effect	434	\$58.8
Induced Effect	77	\$10.6
Total Effect	511	\$240.2

Analysis by Public Sector Consultants Inc.

The individual analyses for the operational and hospital expenditures are presented separately below.

This analysis assumed that 90 percent of the \$185,652,402 total URC operational expenditures were new to Detroit, meaning that \$167,087,162 would not have been spent but for the presence of the URC. Trade margins were applied to retail and wholesale purchases prior estimation of the total economic impact. Exhibit A2 shows the results of the net operational expenditures IMPLAN analysis, not including hospital spending.² The direct effect of the URC spending is lower than the total net spending of \$167 million, due to margining of wholesale and retail trade purchases.

EXHIBIT A2. Economic Impact, Operational Expenditures (not including hospitals)

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	N/A	N/A	N/A	\$164,927,500
Indirect Effect	382	\$23,178,304	\$32,680,887	\$57,329,649
Induced Effect	67	\$2,953,950	\$5,182,125	\$9,182,214
Total Effect	449	\$26,132,255	\$37,863,011	\$231,439,363

*Totals may differ due to rounding.

Analysis by Public Sector Consultants Inc.

Health Insurance Expenditures

Health insurance payments included in operational expenditures were broken down into major spending categories. To remove the potential for double-counting health insurance benefits with URC staff benefits, health benefit payments to faculty and staff living in Detroit were removed when analyzing the impact of URC payroll expenditures on Detroit's economy. Health insurance expenditures were allocated to several underlying industries to better capture how these expenditures flow through the economy. Administrative costs were assumed to represent 15 percent of health insurance costs. The remainder was allocated across various health sectors. Based on a Health Research Institute (2014) report, this analysis assumed that of the remaining funds:

- 31 percent is spent on inpatient care
- 19 percent on outpatient care
- 31 percent on professional services
- 15 percent on pharmacy services
- 4 percent other

² The IMPLAN economic impact tables do not sum across columns. Labor income is part of the total value added presented, and the value added (which already includes labor income) is part of the total output, but these are not the only contributors to total output.

We assumed that 100 percent of the administrative costs were attributable to Detroit's economy, since the health insurers had a significant employment presence in the city. Finally, since most of the employees associated with the medical expenses paid by the URC do not live in Detroit, we assumed that only 5 percent of the total medical expenses associated with U-M and MSU faculty/staff and 50 percent of WSU medical expenses actually occurred in Detroit.

Hospital Expenditure Analysis

While the URC does not directly operate hospitals in Detroit, it does utilize Detroit hospital services and partners with the hospitals for educational purposes. The spending on hospitals by the URC was modeled separately, and then combined with the total operational expenditures for reporting purposes. This analysis assumed that 80 percent of the total \$7,363,825 in hospital expenditures were new to Detroit, meaning \$5.9 million would not have been spent in the city otherwise.

EXHIBIT A3. Economic Impact, Hospitals

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	41	\$3,065,644	\$3,329,171	\$5,891,060
Indirect Effect	11	\$578,190	\$855,435	\$1,490,407
Induced Effect	10	\$442,197	\$775,494	\$1,374,042
Total Effect	62	\$4,086,031	\$4,960,100	\$8,755,509

Analysis by Public Sector Consultants Inc.

Capital Expenditures

University expenditures on capital goods, including construction projects, were examined separately from operational expenditures. These expenditures are highly variable from year to year. In 2015, the URC had \$247,843,853 in capital expenditures, including construction, with vendors in Detroit. An additional \$49,994,442 was spent on construction activities that occurred in Detroit, but were paid to non-Detroit vendors.

Construction Sector

Construction expenditures create a unique situation when looking at a small geographic area, such as a single city. While a Detroit construction company may be the vendor, the actual construction may be occurring elsewhere in the state. Often, a large portion of supplies and labor are purchased close to the location of the construction project, so applying the full value of a construction expenditure to the city would overestimate the actual impact. We assumed that all construction projects with Detroit contractors valued under \$500,000 were fully attributable to the city. Construction projects by WSU were assumed to be 100 percent local, regardless of value. Construction projects occurring outside of the city, but awarded to a Detroit vendor, were given a 20 percent administrative and 15 percent labor/material share of the total project value.

Construction that occurred in Detroit, but were awarded to non-Detroit vendors, still impact the local economy. Just as we assume that construction that occurs outside of the city would not have a full effect on Detroit's economy, we also assume that construction occurring in Detroit by outside vendors would have some effect on the local economy, through the purchase of local goods and/or labor. This analysis assumes that 40 percent of the total projects, expenses have a local impact.

After adjusting for the percentage of construction spending that is estimated to have actually occurred in Detroit, these expenses were combined with other capital expenditures for a total contribution of \$135,196,102 to the Detroit's economy. The analysis assumed that 95 percent of the spending would not have occurred if not for the presence of the URC (meaning that 5 percent would have occurred in Detroit regardless, such as another university using a Detroit vendor to build a dorm room). After accounting for the local construction impact, and the net new impact, total Detroit capital spending was \$128,436,297. The direct effect estimated and reported in Exhibit A4 is lower than the net Detroit spending because it takes into account wholesale and retail margins, when necessary.

EXHIBIT A4. Detroit Economic Impact, Capital Expenditures

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	647	\$41,572,135	\$50,569,502	\$128,053,832
Indirect Effect	164	\$10,551,893	\$15,553,330	\$29,678,574
Induced Effect	166	\$7,325,699	\$12,859,293	\$22,787,153
Total Effect	976	\$59,449,727	\$78,982,125	\$180,519,559

*Totals may differ due to rounding.

Analysis by Public Sector Consultants Inc.

Employee Impact

For reporting purposes, resident and commuting employee economic impacts were combined. However, these groups differ in how they spend money in the city, and therefore, were estimated separately.

URC faculty and staff who reside in Detroit were modeled through a labor income change analysis, using regional purchase coefficients to capture the impact of their spending. This allowed for leakages from the economy due to purchases by residents outside of Detroit. The total faculty and staff counts and wages, including benefits (provided directly by the university or using a university fringe rate) were provided for all staff living in or working in Detroit. The detailed information allowed a precise split between resident and nonresident faculty and staff. In total, the URC employed 8,327 faculty and staff: 1,981 residents and 6,346 commuters. The total impact for resident and commuting faculty and staff is presented in Exhibit A5.

EXHIBIT A5. Total Employee Impact: Detroit Resident Employees and Commuters

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	7,494	\$124,866,931	N/A	\$124,866,931
Indirect Effect	N/A	N/A	N/A	N/A
Induced Effect	626	\$23,039,568	\$38,995,984	\$68,699,171
Total Effect	8,120	\$147,906,499	\$38,995,984	\$193,566,102

Analysis by Public Sector Consultants Inc.

Net Resident Impact

The URC has 1,981 university faculty and staff living in Detroit; in total, they earn \$106.2 million per year. We assumed that 90 percent of URC employees living in Detroit are doing so because of the URC's presence. The total net new employees to Detroit include 1,783 resident faculty and staff with a payroll of \$95,556,026,³ resulting in a total economic impact of \$142.6 million and 2,124 jobs.

EXHIBIT A6. Detroit Economic Impact, Resident Faculty and Staff

Impact Type	Employment	Labor Income	Value Added	Economic Impact
Direct Effect	1,783	\$95,556,026	N/A	\$95,556,026
Indirect Effect	N/A	N/A	N/A	N/A
Induced Effect	341	\$15,128,359	\$26,528,920	\$47,004,201
Total Effect	2,124	\$110,684,385	\$26,528,920	\$142,560,227

Analysis by Public Sector Consultants Inc.

³ IMPLAN automatically calculates a percentage of local commuters and removes their spending from the labor impact model. PSC adjusted the input value of labor income to account for the fact that all resident employees are in fact residents of Detroit. Commuters were estimated separately. This was necessary because the model assumes only a 32 percent commuter rate for Detroit, while the URC population commuter rate is much higher.

Commuter Spending Profile

A yearly spending profile for commuters was developed to estimate the economic contribution of non-resident faculty and staff. Several sources were used to compile a single average spending profile for use in IMPLAN:

- \$896 per year on lunch (Sillin 2016)
- \$780 per year for coffee (Muniz 2014)
- \$1,476 per year for commuting costs (Wolters Kluwer 2016)
- \$1,980 on miscellaneous retail expenditures

The miscellaneous retail expenditures were determined from the 2015 Gallup poll that estimated that discretionary spending for the average individual American is \$86 per day or \$602 per week (Riffkin 2015). Commuting, lunch, and coffee spending was subtracted from the total, leaving \$533 per week in discretionary spending, or \$380.73 per work week. This research assumed that 10 percent of these remaining discretionary funds were spent within the city of Detroit for miscellaneous goods and services, for a total of \$38.07 per week in additional expenditures or approximately \$1,980 annually.

Based on these assumptions, we estimated that employees working in Detroit spent an average of \$5,132 in Detroit, or a total of \$32,567,672.

Net Commuter Impact

We also assumed that 90 percent of commuters work in Detroit because of the URC, resulting in 5,711 net new commuting employees with a total net spending of \$29,310,905. Much of this spending is on the purchase of retail goods or services (gasoline, food and beverage stores, etc.), meaning that only the retail margin is counted as an impact directly to Detroit.⁴ The total impact for URC commuters to Detroit is \$49 million, with 5,711 commuters and an additional generation of 285 jobs.

EXHIBIT A7. Detroit Economic Impact, Commuters

Impact Type	Employment	Labor Income	Value Added	Economic Impact
Direct Effect	5,711	\$29,310,905	N/A	\$29,310,905
Indirect Effect	N/A	N/A	N/A	N/A
Induced Effect	285	\$7,911,209	\$12,467,065	\$21,694,970
Total Effect	5,996	\$37,222,114	\$12,467,065	\$51,005,875

Analysis by Public Sector Consultants Inc.

Student Spending

We made several assumptions to estimate the net impact of student spending. First, given that there are few schools in Detroit that have the same draw and presence as WSU and U-M Dearborn, we assumed that all students who live in Detroit and attend a URC institution, but who are originally from another part of the state, are only in Detroit because of the URC. For students originally from Detroit, we assumed that 80 percent are attending school in Detroit because of the URC.

We excluded tuition payments from our analysis, since this impact is captured through the analysis of university spending. We also excluded spending for on-campus housing. Finally, graduate assistants and medical residents who worked for the universities in Detroit were excluded, since they were captured in the employee analysis. The total number of graduate assistants and medical students working in Detroit was subtracted proportionally from the categories of “from Detroit” and “non-Detroit” students. Four percent of graduate students attending WSU are “from Detroit” while 96 percent are not. These percentages were applied to graduate assistants and medical residents working in Detroit for removal from the total student counts.

In total, there are 28,335 URC students living in or attending school in Detroit. After removing employees and adjusting for students who would have attended school in Detroit anyway, there were 27,194 net new students.

⁴ Commuter purchases were modeled using an industry change analysis in IMPLAN. The economic impact is presented on the same basis as the income change model used for residents to make the impacts comparable.

Student Data

The total number of undergraduate, graduate, and professional students living in Detroit was provided by URC institutions. This allowed for a breakdown of spending by type of student to more accurately depict the total economic impact. Estimated student budgets provided a baseline for estimating student expenditures in Detroit (WSU 2016j; CollegeBoard 2016). Full-time and part-time student spending profiles were modeled for both undergraduate and graduate students. Students were further divided into those living on campus, those living off campus with a parent, and those living off campus independently. In total, 12 student spending profiles were developed.

Student expenditure estimates available online from WSU break down student spending into the following categories:

- Books and supplies
- Room and board
- Miscellaneous
- Transportation
- Tuition-related expenses⁵

Several of these categories were further broken down to allow for more precise estimation of the economic impact of students and more accurate modeling in IMPLAN. A high-level spending profile used for full-time undergraduate students is presented below.

EXHIBIT A8: 2015–2016 Full-time Undergraduate Student Budget

Budget Item	Living With Parent	Living Off Campus	Living On Campus
Books & Supplies	\$1,196	\$1,196	\$1,196
Room & Board*	\$1,350	\$9,133	\$9,874*
Groceries	\$1,350	\$1,350	N/A
Room	N/A	\$7,783	N/A
Transportation	\$3,681	\$3,681	\$1,082
Miscellaneous	\$1,548	\$1,980	\$1,944
Restaurants	\$471	\$602	\$346
Entertainment	\$369	\$472	\$518
Miscellaneous	\$708	\$905	\$994
Groceries	N/A	N/A	\$86
Subtotal	\$7,775	\$15,990	\$4,222

*To avoid double-counting, the economic impact analysis does not include room and board for students living on campus, but does include miscellaneous expenses on groceries they may purchase.

*Totals and sub-totals may differ due to rounding.

Student expenditures on transportation and miscellaneous expenditures were further broken down into categories such as gas, car insurance, cell phone expenditures, restaurant purchases, etc. We estimated that students in Detroit due to the presence of the URC spent \$274 million in 2014–2015. Regional purchase coefficients were used to determine how much student spending actually occurred in Detroit. Adjustments were made to the local purchasing coefficients of real estate (rental), transit (such as buses), and retail bookstores to reflect regional spending more closely. Retail margins were applied to this spending where appropriate. In total, students spent \$97.7 million directly in Detroit due to the presence of the URC.

⁵ Tuition-related expenses are not included in the spending pattern of students, as this would constitute a double counting with university expenditure.

EXHIBIT A9: Economic Impact, Student Expenditures

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	1,119	\$31,098,637	\$61,270,691	\$97,697,262
Indirect Effect	165	\$8,826,054	\$13,766,300	\$25,523,882
Induced Effect	122	\$5,400,364	\$9,477,441	\$16,793,893
Total Effect	1,406	\$45,325,055	\$84,514,432	\$140,015,038

*Totals may differ due to rounding.

Analysis by Public Sector Consultants Inc.

Alumni Spending

The URC provided a count of the alumni living in every zip code in Michigan, which was used to calculate the number of URC alumni living in Detroit. In total, an estimated 11,211 URC alumni live in Detroit—6,572 with an undergraduate degree, and 4,639 with a graduate degree.

Using URC provided data on undergraduate/graduate counts and graduation year in combination with the American Community Survey (ACS) data on age, education, wages and employment for the city of Detroit, a detailed age/income distribution was developed for both graduate and undergraduate degree holders. This distribution takes into account the estimated experience graduates have based on their year of graduation. Earnings were adjusted up to reflect the fact that graduates of URC institutions make more than the average Michigan college graduate. This was estimated using federal scorecard data from the U.S. Department of Education (2016). The weighted average of earnings for alumni of the URC institutions was 23 percent higher than for the comparison group, so wage estimates for URC alumni were increased by 23 percent above the average wage. Alumni living in the city earned an estimated \$649.1 million.

Many of these alumni would have attended college elsewhere in the absence of the URC. For the purposes of estimating the economic impact to Detroit, we included only the portion of alumni earnings that we estimated were attributable to their URC attendance. As noted, URC alumni living in Detroit earn 23 percent more than graduates from other universities with similar degrees and years of experience. This increment was used to calculate the economic impact of alumni, which is a net new total of \$121,467,621. All alumni who currently reside in Detroit were included in the analysis. The total economic impact is presented in Exhibit A10.

EXHIBIT A10: Economic Impact, Alumni Expenditures

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	N/A	\$121,467,621	\$0	\$121,467,621
Indirect Effect	N/A	N/A	N/A	N/A
Induced Effect	590	\$26,135,383	\$46,346,696	\$82,318,657
Total Effect	590	\$147,603,004	\$46,346,696	\$203,786,278

Analysis by Public Sector Consultants Inc.

Tax Impact

The URC provided an estimate of the wages paid to resident and nonresident staff. We calculated an estimate of taxable income per worker by calculating the average income per worker, and then reduced it by the average household size, multiplied by Detroit's personal exemption of \$600. We assumed an average household size of 2.71 people for resident staff and an average household size of 2.53 for nonresident staff, the average household sizes for Detroit and Michigan, respectively (U.S. Census Bureau 2016). We then calculated the average household income tax payment by multiplying taxable income by Detroit's tax rate of 2.4 percent for residents and 1.2 percent for nonresidents. This calculation resulted in an estimated income tax payment of \$5.5 million for URC faculty and staff.

The \$5.5 million in income represented \$0.01388 in income tax for each dollar of wages. We applied this rate to all other labor income (net of benefits) identified by the IMPLAN model. This added an additional \$1.5 million in income taxes which rounded up to total income tax payments of \$7.1 million.

Facilities owned by the URC are exempt from property tax payments. We used the IMPLAN model estimates of property tax payments for induced and indirect effects. The IMPLAN model identified \$8.4 million in state and local property tax payments. The average property tax rate in Detroit is 84.5 mills (Detroit Economic Growth Corporation n.d.). Of this, 33.5 mills (39.6 percent) are dedicated to the city. Therefore, we estimated that URC activity resulted in \$3.3 million in property tax payments to the city.

Appendix B: URC Sector Reports

Over the past eight years, Michigan's University Research Corridor – an alliance between Michigan State University, the University of Michigan and Wayne State University –has commissioned a series of reports examining the contributions of the URC to key sectors of Michigan's economy. Key findings include:

Talent for the Global Economy (2015)

- Among top research university clusters, the URC universities ranked first in medical degrees and total degrees awarded, and enrollment, and second in advanced degrees in high-tech fields such as engineering and sciences.
- Of the 32,000 URC graduates each year, more than a third earn degrees in high-demand fields, such as medicine and engineering.
- Ann Arbor, East Lansing and Midtown Detroit residents 25 years old and older are three times more likely to have a degree compared to other Michigan communities.

Blue Economy (2014)

- One in five Michigan jobs (718,700) is associated with water-enabled or water-related industries.
- From 2009-2013, URC universities received 2,100 awards totaling nearly \$300 million and supporting 341 researchers from dozens of departments for water-related research and outreach.
- Each year, URC universities produce more than 3,400 graduates prepared to analyze and find solutions to water-related issues in academia, government, and the private sector.

Alumni Entrepreneurship (2013)

- A 2013 survey of URC alumni found 19.1 percent of respondents had founded or co-founded a business.
- URC alumni entrepreneurs started or acquired businesses at double the national average rate among college graduates between 1996 and 2012, and many of these companies were in fields outside their major area of study.
- URC alumni entrepreneurs have started businesses in every state and more than 100 countries.
- Nearly half of the businesses started by URC alumni entrepreneurs began in Michigan.
- URC alumni-started firms were nearly 1.5 times more likely to stay in business versus the national average.

Automotive Innovation (2012)

- The URC universities confer more than 3,600 degrees annually in auto-ready disciplines, supplying the industry with talent.
- Between FY 2007 and 2011, the URC universities spent \$300 million on more than 1,400 auto projects. More than 28% of the research was funded by private industry – nine times the average share of industry funding for all university R&D at these institutions.
- URC researchers have helped automakers improve vehicle quality and safety, improve engine efficiency and performance, and reduce fossil fuel use.

Information and Communication Technology (2011)

- URC universities spent nearly \$74 million on research projects with a strong IT focus in FY2010.
- Nearly 40% of the approximately 150 URC-assisted start-ups between 2001 to 2011 had an ICT component.
- Information technology employs about 3.5 percent of the state's workforce (135,000 workers) – a significant stand-alone sector and the underpinning for much of the major industry activity and growth represented in previous sector reports.

Advanced Manufacturing (2010)

- In 2007, Michigan's advanced manufacturing industry employed 381,351 workers, accounting for 10.3 percent of all employment. One-third of the Midwest's advanced manufacturing jobs were in Michigan, paying an average wage of \$64,122.
- URC universities spent \$101 million on advanced manufacturing R&D in 2009.
- URC universities are educating more than 14,000 students in engineering.

Life Sciences (2009)

- Michigan's life sciences industry employed more than 79,000 workers, (2.1 percent of all employment in 2006).
- Between 1999 and 2006, life sciences industry employment grew by 10.7 percent while manufacturing employment dropped by 24 percent.
- Life sciences wages averaged \$83,494 in 2006.
- In 2008, URC universities spent \$887 million on life sciences research and development.
- R&D expenditures grew 69 percent since the founding of the Life Sciences Corridor in 1999.

Alternative Energy Research and Development (2008)

- Michigan has a comparative advantage in biomass and wind compared to the energy potential in the other 49 states.
- URC universities spent more than \$79.5 million on R&D related to alternative energy in 2007.
- More than 50% of all alternative energy R&D supported the auto industry.