

**Economic Impact of  
the University of  
Rochester  
Measuring the Regional Stimulus  
Provided by New York State's Seventh  
Largest Private Employer**

June, 2012

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Prepared for:  
**University of Rochester Office of Government and  
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# Economic Impact of the University of Rochester

## Measuring the Regional Stimulus Provided by New York State's Seventh Largest Private Employer

June, 2012

### SUMMARY

Leaders in the Rochester community are very optimistic about the prospects for economic growth in our region. Encouraging signs include the better than state average growth in our region and the lower than state average unemployment rate. The broad base of smaller firms and diversity of industry clusters in the region has led to economic stability for a region that was once dependent on just a few large firms in the manufacturing industry.

As New York State's seventh largest private employer, the University of Rochester (UR) is considered a vital cornerstone in our region's economic health. Bucking the trends observed by most firms and institutions during the recent national recession, the UR has continued to grow by adding jobs and research capacity that position it for present and future impact locally, regionally and nationally. Our regions scorecard for innovation potential ranks us ahead of New York and the nation and that is significantly related to the UR and its cutting edge research.

"Meliora" is the University motto. Latin for "ever better", the motto aptly describes the University's continued growth, expansion and commitment to making the world a better place. The Rochester economy is the beneficiary of this commitment.

### University Profile

The following metrics represent the primary ways the UR is contributing to the Rochester economy. The University:

- purchased goods and services in excess of \$716 million in 2011. Of this total, 20% (more than \$144 million) was spent to purchase goods and services in the Rochester Metropolitan Statistical Area (RMSA).

- spent an average of \$217 million per year (in 2011 dollars) for capital improvements including building and fixed equipment and movable equipment.
- provided employment to 23,485 people (full-time, part-time, and time-as-reported) at year-end, December 31, 2011.<sup>1</sup>
- paid wages of almost \$1.35 billion of which more than \$1.3 billion was to employees living in the RMSA and an additional \$16.4 million was to employees living outside the RMSA but still in close proximity to Rochester.<sup>2</sup>
- received more than \$2.7 billion in external funding (federal and non-federal agencies) from FY 2005 to FY 2011.

#### Visitors to UR:

- booked over 21,800 hotel reservations; and
- lodged in regional hotels more than 34,300 nights.

The students of UR also contribute to the economic activity of the RMSA. More than 3,800 undergraduate and graduate students<sup>3</sup> per semester:

- lived off-campus, contributing their living expenses to the Rochester economy; and
- purchased food off-campus on a regular basis—spending their money locally in restaurants or shopping at grocery stores.

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<sup>1</sup> Employees of University of Rochester include all adjunct faculty, faculty, post doctorates, research and teaching fellows, medical residents, and staff at the University of Rochester. In addition, all employees of Strong Memorial Hospital, Visiting Nurse Service (VNS), Visiting Nurse Signature Care, Highland Hospital, High Tech Rochester, Excell Partners, Inc. and Rochester BioVenture, and all three Highlands – Pittsford, Brighton, and the Living Center are included. CGR will refer to this entire body as University of Rochester employees. We do not include undergraduate students and graduate students in the employee spending part of the report, but rather in the student spending component of the economic impact. Including graduate students, UR provided employment to 26,746 as of 12/31/11.

<sup>2</sup> Includes employees living in Allegany, Cattaraugus, Cayuga, Chemung, Genesee, Schuyler, Seneca, Tompkins, or Yates counties.

<sup>3</sup> The UR had 8,722 students enrolled in spring semester 2011 and 9,221 enrolled in the fall semester of 2011. 3,800 represent only those who lived off campus or did not buy a meal plan in each semester.

## Economic Impact Results

Center for Governmental Research, Inc. (CGR) translates these metrics into economic impact estimates under two scenarios.

- **Local and Traded Sector Combined:** This scenario sums all contributions of the UR to the Rochester regional economy.
- **Traded Sector:** A more conservative estimate of the economic impact, this scenario attempts to discern which elements of UR are the results of a “trading” relationship with the economy outside the Rochester region. Few communities the size of Rochester contain an academic medical center like the University of Rochester Medical Center (URMC). Without URMC, millions of dollars in National Institutes of Health research funding would flow elsewhere. If routine obstetric services were no longer available from Strong Memorial or Highland hospitals, however, these services would be provided by others.

For the *Local and Traded Sector* combined the University of Rochester and its affiliates generate:

- approximately 47,000 jobs (direct and spillover) in the RMSA;
- more than \$2.4 billion in wages (direct and spillover) in the RMSA; and
- approximately \$143 million in sales tax, personal income tax, and local property taxes to the RMSA and NYS economy.

For the *Traded Sector* the University of Rochester and its affiliates generate:

- more than 31,500 jobs (direct and spillover) in the RMSA;
- more than \$1.7 billion in wages (direct and spillover) in the RMSA; and
- slightly more than \$102 million in sales tax, personal income tax, and local property taxes to the RMSA and NYS economy.

## Health Sciences Center for Computational Innovation (HSCCI)

In 2010, the UR launched a partnership with IBM to create the most powerful supercomputer dedicated to health research in the world. This opportunity has the potential to leverage public and private partnerships to bring millions of dollars in sponsored research to the region for a variety

of disciplines, most notably in health science. CGR has estimated that at full capacity<sup>4</sup> (10 year steady state) the center could generate 880 new jobs and over \$49 million annually in additional labor income for the region.

## 2011 Results in Perspective

The economic impact of the University of Rochester and its affiliates on this region is difficult for some to comprehend. To put this impact into perspective, University of Rochester's traded sector impact of 31,500 jobs equated to 6% of the entire labor force of the RMSA in 2011.<sup>5</sup> Were this number of jobs to be lost, the unemployment rate in the RMSA would soar to about 13%.<sup>6</sup>

If one considers the local and traded sector combined, UR and its affiliates employed or generated employment for approximately 47,000 people. This equated to 9% of the employment for the entire labor force of the RMSA in 2011.

## Intangible Contributions

Led by the University of Rochester, the region's colleges and universities have facilitated the region's transition from a manufacturing-based economy to one based on knowledge creation. This is the goal of all mature economies worldwide.

Collectively, educational institutions have enabled countless individuals to successfully move to new careers, either by re-directing their energies into new fields or by enhancing their capacity through further education. This is a process of personal re-invention that has become ubiquitous in the 21<sup>st</sup> century economy. Career "cycling" is expected to become ever more rapid in coming decades.

Finally, led particularly by UR's Eastman School of Music, the colleges and universities have created a cultural environment that is unmatched in accessibility and depth. As researchers like the University of Toronto's Richard Florida have described, the vitality of a community's cultural life is becoming an ever-more important factor in the attraction of footloose firms and "creative class" individuals.

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<sup>4</sup> CGR measured the impact of HSCCI separately as it was not at full capacity in 2011.

<sup>5</sup> Source for Labor Force: Local Area Unemployment Statistics (LAUS) – Bureau of Labor Statistics for 2011 RMSA. This is defined as those actively employed or actively looking for work.

<sup>6</sup> CGR computed the 2011 unemployment rate for the RMSA at 7.4%.

The University of Rochester is a pillar of strength for the Rochester community. Not only is it our most important economic institution in the current economy, its continued vitality and expansion has become a foundation on which the growth of many sectors can be founded.

## ACKNOWLEDGEMENTS

The report is a team effort between CGR and many employees of UR who helped to provide the data necessary to perform the analysis. CGR wishes to thank everyone who contributed. In particular, we thank Josh Farrelman and Mark Michaud for their time in coordinating data requests, answering questions, and providing feedback on the report.

## STAFF

Scott Sittig, M.P.P., Senior Associate served as a project co-director and manager and oversaw data collection, organization and analysis of the data, provided input on methodological concerns, and drafted and edited the final report.

Mike Silva, Research Associate, organized and analyzed data and helped define consistent methodology.

Hannah Dalager, Research Assistant, assisted with data collection and analysis of visitor data.

# TABLE OF CONTENTS

<b>Summary</b> .....	<b>i</b>
University Profile .....	i
Economic Impact Results .....	iii
Health Sciences Center for Computational Innovation (HSCCI) .....	iii
2011 Results in Perspective .....	iv
Intangible Contributions .....	iv
<b>Acknowledgements</b> .....	<b>vi</b>
<b>Staff</b> .....	<b>vi</b>
<b>Table of Contents</b> .....	<b>vii</b>
<b>Introduction</b> .....	<b>1</b>
The University in the Context of the Local, State and National Economy .....	1
The University and its Affiliates .....	3
Outline of Report .....	4
<b>Profile of University of Rochester and its Affiliates</b> .....	<b>5</b>
University of Rochester Purchases .....	5
Capital Expenditures .....	6
Recently Completed Capital Projects.....	7
Kodak Hall at Eastman Theater and other Eastman School Renovations (\$46.9 million) .....	7
Saunders Research Building (\$60 million) .....	7
Capital Projects in Progress .....	8
Warner School Building (\$24 million).....	8
Wilmot Cancer Center Vertical Expansion Project (\$58.8 million) .....	8
O'Brien Hall (\$17 Million) .....	8
Planned Future Capital Expenditures .....	9
New Golisano Children's Hospital – (\$145 million).....	9
I-390 Interchange Project (\$100 million) .....	9
College Town Project (\$100 Million) .....	10
ARTWalk Phase II (\$10.2 Million).....	10
Brooks Landing.....	11
Employees .....	11
UR is one of New York State's Top Employers .....	13
Visitors.....	14
Admission Visits.....	15
Athletic Events .....	15

Arts.....	15
Graduation/Alumni Events.....	16
Music.....	16
Strong Memorial Hospital.....	17
Other.....	17
Students.....	17
Research Funding at University of Rochester.....	18
Grant Activity at UR.....	18
Patents, Royalties, and Start-Ups.....	19
Patents & Invention Disclosures.....	19
Royalty Revenue.....	20
Start-up Companies.....	21
Regional Support for Technology Commercialization.....	22
Health Sciences Center for Computational Innovation.....	23
HSCCI Staff.....	23
Health Grants and Contracts.....	24
Other Science-based External Funding.....	25
Private Companies.....	26
Technology Transfer.....	26
Conclusion.....	27
Community Investment in the Region.....	28
Brooks Landing, Riverview, Mortgage Support.....	28
Admissions Support for City School Students.....	28
Hospital Contributions to the Community.....	28
<b>Methodology.....</b>	<b>29</b>
Direct Impact.....	30
Spillover Impact.....	30
“Traded Sector” Impacts: Implications for Clinical Revenue.....	31
<b>Economic and Fiscal Impact Estimates.....</b>	<b>32</b>
Employment Impacts.....	32
Labor Income Impacts.....	33
Fiscal Impact.....	34
<b>Conclusion.....</b>	<b>35</b>

## INTRODUCTION

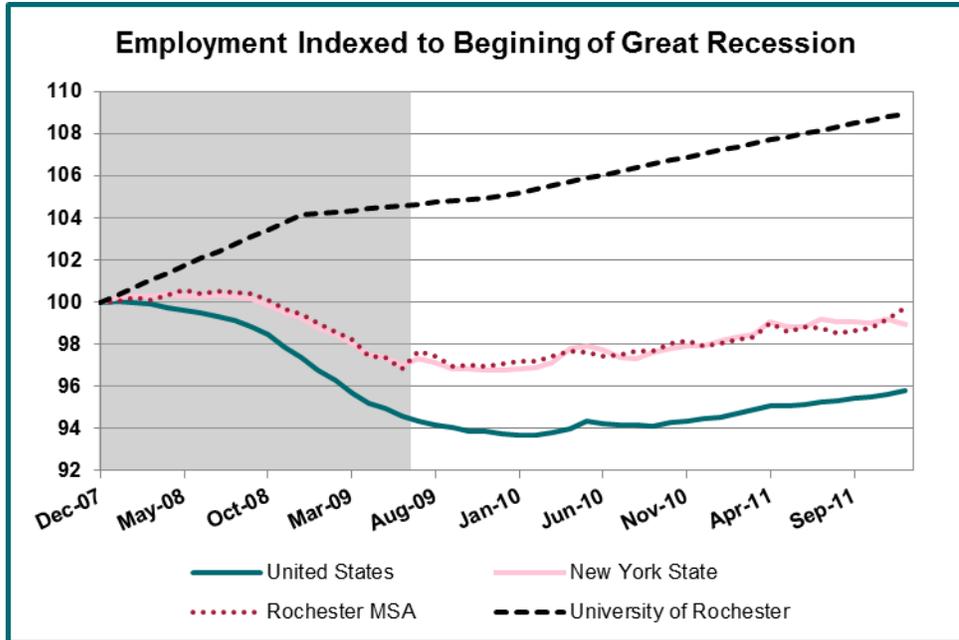
Leaders in the Rochester community are very optimistic about the prospects for economic growth in our region. Encouraging signs include the better than state average growth in our region and the lower than state average unemployment rate. The broad base of smaller firms and diversity of industry clusters in the region has led to an economic stability for a region that was once dependent on just a few large firms in the manufacturing industry.

True to its motto “Meliora”, the University of Rochester (UR) is “ever growing” and helping spur the economic vitality of the Rochester region. In the midst of the region’s slow recovery from the long national recession, the UR demonstrated its resilience and vitality by adding new jobs, wages and capital spending on new projects. Already a global leader in science based research, the UR has added new technology creating capacity for advanced research that will attract dollars and people to the region from many parts of the country.

The investments of the UR not only help them grow, but they make our community a more attractive and vibrant place to live, work and promote. Consider projects like the new I-390 interchange or College Town on Mt. Hope Avenue and it is clear that the University is driving growth and positive change well beyond the role of educating students and providing high quality medical care. “Learn, Discover, Heal, Create – And Make the World Ever Better” is the University mission statement instituted in 2011 that embodies the breadth of intellectual pursuits that drive this institution to continue expanding its impact upon our region.

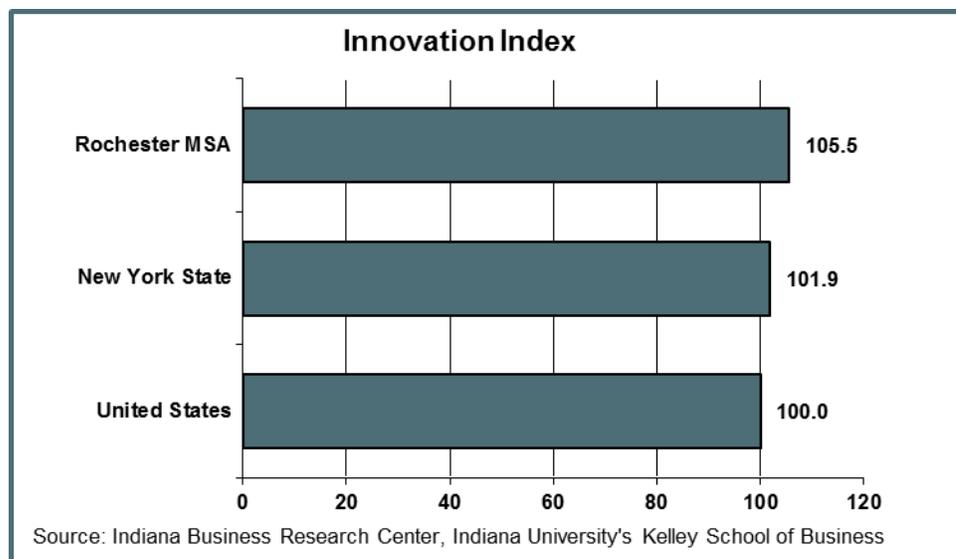
## The University in the Context of the Local, State and National Economy

As the national economy continues to recover from the deep recession that dates back to 2007, many economists have noted that Upstate New York, and particularly Rochester, fared much better than other parts of the country. The following chart emphasizes that Rochester as a whole may be close to pre-recession employment levels even as the US and NYS both lag behind in their recovery. Most notably, however, is that the UR continued to grow even in the midst of the recession. The UR has been on one steady growth curve for many years now and has outperformed our region, state and country in regards to its employment growth in the last five years.



The UR along with other firms and institutions in the education and health services sector constituted 26% of the employment in 2011. This was the largest sector by employment in our region with the next largest sector being government at 16%. Our region’s transition to a knowledge based economy and the increasing sophistication of medical science, rising affluence, and the aging of the population all contribute to the education and health services sector employing the most people.

The UR’s recognition as a leading medical research facility and technology incubator puts Rochester on the map nationally in regards to innovation capacity. As the chart on the next page points out, the Rochester MSA ranks higher than the whole of New York State and the US in regards to creative potential. Our region has been transitioning to a knowledge based economy for many years now, and the UR is a key leader in that transition.



Another sign of the UR's influence has been the creation of new business ventures fueled by innovative, knowledge based research. UR has received more than \$2.7 billion in external funding over the past seven years with the annual average dollar value of grants increasing each of the last two years. Their future plans demonstrate this continued commitment to research. For example, the partnership with IBM to create the Health Sciences Center for Computational Innovation creates enormous capacity to attract new research dollars as the supercomputers will be some of the few available in the United States for advanced medical research. This supercomputing capacity has the potential to serve as both a catalyst and a resource for the region's technology-based commercial sectors.

Rochester is no longer an economy dependent on a few firms in a single sector for its economic vitality. It has broadened its base and the depth of knowledge, innovation, creative capacity and technical skill offered by the UR is a leading reason why our economy is emerging strong and positioned for future growth.

## The University and its Affiliates

This UR is comprised of several different schools and/or divisions as well as some affiliates.

- The River Campus includes:
  - The College of Arts, Sciences and Engineering
    - ◆ The School of Arts and Sciences
    - ◆ Hajim School of Engineering and Applied Sciences (including the Laboratory for Laser Energetics – LLE);
  - William E. Simon Graduate School of Business Administration;

- Margaret Warner Graduate School of Education and Human Development; and
- The Eastman School of Music.
- The University of Rochester Medical Center (URMC) includes:
  - School of Nursing;
  - School of Medicine and Dentistry;
  - Eastman Institute for Oral Health;
  - Strong Memorial Hospital;
  - University of Rochester Medical Faculty Group; and
  - Health Sciences Division.
- Memorial Art Gallery
- The affiliates are:
  - Visiting Nurse Service (VNS) and Visiting Nurse Signature Care (VNSC);
  - The Highlands – Highlands at Pittsford; Highlands Living Center; and Highlands at Brighton;
  - Highland Hospital;
  - Excell Partners;
  - HTR (High Technology Rochester); and
  - Rochester BioVenture Center.

## Outline of Report

This report details the economic and fiscal impacts that result from the operations of the University and its affiliates. It also highlights the variety of investments the University is making to stimulate the Rochester region. CGR focuses on the Rochester Metropolitan Statistical Area (Counties of Monroe, Wayne, Livingston, Orleans, Ontario) as the level of analysis in determining the economic impact. New York State is the level of analysis for estimation of the fiscal impact. Other programs and initiatives are defined in each section according to scope and expected impact.

CGR's report is presented in three parts:

1) *“Profile of University of Rochester and its Affiliates”* which provides information about the size of UR's staff and students as well as actual expenditures by UR. These are the categories and “raw data” used to estimate the economic and fiscal impact. This section also includes information about the research productivity of UR in terms of grant activity, patents, and royalty revenues.

2) “*Methodology*” which discusses the difference between the traded and local sectors. This section provides explanations of terminology as well as the methodological procedures CGR used to estimate the economic impact.

3) “*Economic and Fiscal Impact Estimates*” which provides estimates of the economic impact of UR, including purchases, employees, capital spending, student spending, and visitor spending. The impact is estimated both in terms of employment and labor income. CGR also provides estimates of the fiscal impact in terms of sales, income and property tax revenue generated.

## PROFILE OF UNIVERSITY OF ROCHESTER AND ITS AFFILIATES

An economic impact study estimates the wages and jobs that an institution stimulates as a result of its business operations. Essentially, it answers the question, “How is the economy larger because of this institution’s activity in the community?” CGR analyzes five primary areas of business activity conducted by the UR and its affiliates in order to quantify the economic impact. The five areas include:

- Purchasing;
- Capital Investments;
- Employment;
- Visitor activity; and
- Student spending.

Other data presented in the report do not directly stimulate wages and jobs, but are central to the culture and vibrancy of the Rochester community. The primary data on which the economic analysis of the UR and its affiliates is based are summarized in this section.

### University of Rochester Purchases

During calendar year (CY) 2011<sup>7</sup>, the University of Rochester and its affiliates purchased goods and services in excess of \$716 million.

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<sup>7</sup> Where possible, CGR has captured all dollars for the calendar year of 2011. For reference, the fiscal year at UR is defined as July 1 to June 30. Thus, fiscal year 2011 ran from July 1, 2010 to June 30, 2011.

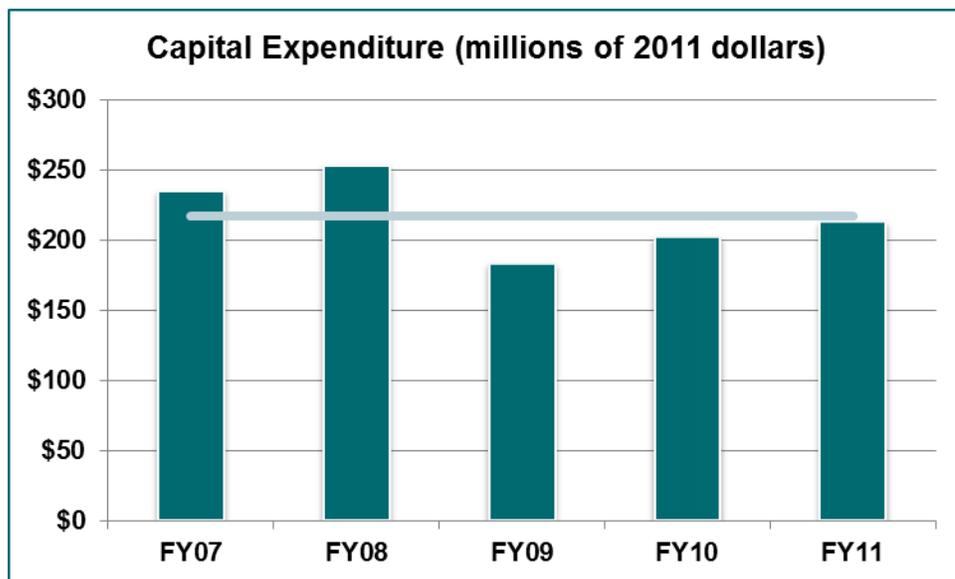
- Of this total, more than \$144 million was spent to purchase goods and services in the Rochester MSA.

The UR purchased 9% more goods and services in 2011 than they did in 2009. However, the amount purchased locally declined by 22%. In 2011, one out of every five dollars (20%) spent on goods and services were spent in the Rochester MSA.

## Capital Expenditures

Given the variable nature of capital expenditures, CGR uses a rolling average over five years to estimate the economic impact of capital expenditures. During the past five fiscal years (FY2007 – FY2011), the University of Rochester

- spent an average of \$217 million per year (in 2011 dollars) on capital additions including building, renovation and construction equipment:
- this equates to \$1.1 billion (in 2011 dollars) of capital expenditures over the five year period.



As evidenced in the graph above, capital spending is rebounding after the economic recession which portends well for the construction industry in the Rochester MSA.

## **Recently Completed Capital Projects**

There are a number of projects that have been completed in the past five years that have been responsible for this wave of capital spending by UR.<sup>8</sup>

### ***Kodak Hall at Eastman Theater and other Eastman School Renovations (\$46.9 million)***

In December 2010, the Eastman School of Music celebrated the culmination of its multi-year construction project, and the realization of George Eastman's original dream for the School, when it opened the new Eastman East Wing at East Main and Swan Streets. The \$46.9 million project included renovations to the School's Eastman Theatre performance hall, now named Kodak Hall at Eastman Theatre, as well as the expansion of the School with a new East Wing building which includes a large-ensemble rehearsal space, studios, an atrium with a box office and gift shop, and the new Hatch Recital Hall. The renovated Eastman Theatre re-opened in fall 2009 and included a new sound system, the removal of back rows of seats, the addition of a back wall on the orchestra level, and orchestra and mezzanine-level boxes, all giving the hall improved acoustics and a more intimate feel. It continues to serve as the principal venue for Eastman School ensembles and for the Rochester Philharmonic Orchestra.

An earlier phase of the renovation of the Eastman Theatre was completed in October 2004 and focused on improvements to acoustics, stage lighting, the orchestra pit, and various backstage areas.

### ***Saunders Research Building (\$60 million)***

In April 2011, the four-story, 200,000 square foot Saunders Research Building officially opened. This building is the home to the Clinical and Translational Science Institute and several other research programs and academic departments. It brings together many clinician scientists who previously worked separately and serves as the hub of resources, expertise, and networks necessary to accelerate the clinical application of biomedical research as well as increase the effectiveness of clinical research and clinical education.

To date the CTSI and its affiliated programs have received \$65 million in total direct support from the National Institutes of Health (NIH). It is also estimated that the CTSI has helped garner an additional \$280 million in research and education grants that have been awarded to researchers at URMC and other institutions over the last six years. URMC received \$50

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<sup>8</sup> Expenditures are given as cumulative through FY2011 unless otherwise noted. Amounts are reported at historical cost and not inflated to reflect 2011 dollars.

million from NYS for the construction of the Saunders Research Building. The building should enable the University to aggressively expand the number of clinical and translational investigators over the next 10 years, which could yield an additional \$25 million in external research revenue per year.

The facility is the first of its kind, with the building incorporating several design features to increase energy efficiency—the Medical Center has received a Leadership in Energy and Environmental Design (LEED) certification, which makes the Saunders Research Building the first LEED-certified building on the University of Rochester campus.

## ***Capital Projects in Progress***

### ***Warner School Building (\$24 million)***

In April 2011, construction began on the new Raymond F. LeChase Hall that will serve as the new home for the Margaret Warner Graduate School of Education and Human Development. This four-story, 65,000-square-foot facility is expected to be completed by early 2013 and provides a unified home for the Warner School.

This space will provide 14 new classrooms, research facilities, administrative and faculty office space, conference rooms, and space to host community events. The space will be designed to model best practices in teaching, professional development and learning, including cutting-edge technology that supports educational research and reform, group study spaces and demonstration classrooms to model effective pedagogical approaches with K-12 students. The Warner School of Education, founded in 1958, is involved in several education reform projects in the Rochester community. Many of these projects will greatly benefit from the new facilities.

### ***Wilmot Cancer Center Vertical Expansion Project (\$58.8 million)***

Expected to be completed in FY2012, this four-story expansion of the James P. Wilmot Cancer Center will house 30 additional adult medical/surgical beds, a new 12 bed Blood and Bone Marrow Transplant unit, and provide for the imaging needs of the Cancer Center. In May 2008, the University completed the four-story 164,000 square foot James P. Wilmot Cancer Center.

### ***O'Brien Hall (\$17 Million)***

The University of Rochester will construct a new, \$17 million five-story residence hall overlooking the Genesee River on Wilson Boulevard. Construction began in September 2011 and O'Brien Hall is expected to open in September 2012. The 52,000-square-foot structure will hold 150 students and complement the Anderson and Wilder Towers and the Sage

Arts Center, which are clustered together in Jackson Court. This new residence hall, the first on the River Campus in more than 40 years, will bear the name of President Emeritus Dennis O'Brien. The construction of O'Brien Hall is targeted to meet LEED gold certification standards—a first for the River Campus—to reduce negative environmental impacts and improve energy performance, among many goals.

## **Planned Future Capital Expenditures**

### ***New Golisano Children's Hospital – (\$145 million)***

The project involves the construction of a new, dedicated children's hospital. The eight-story, 245,000 square foot hospital will be located on Crittenden Blvd adjacent to the current Strong Memorial Hospital lobby. The project as currently envisioned includes 56 private pediatric rooms, dedicated pediatric imaging facilities, a 60 bed neonatal intensive care unit, pediatric operating rooms, a pediatric intensive care unit, and indoor and outdoor play spaces for patients. Groundbreaking for the project is planned for late summer or early fall this year with an expected opening in FY2015.

### ***I-390 Interchange Project (\$100 million)***

The University is working with Federal, State and Local officials, and the community to redesign Interstate 390 between exits 15 and 17. The proposed I-390 Interchange Project will support and accommodate increased traffic flow by making a number of new and structural improvements to I-390 at Routes 15 and 15A, East River Road, and Kendrick Road. This includes direct access to I-390 from the University via a proposed Kendrick Road ramp that would provide relief and a significant traffic benefit to the surrounding roadway network and among the surrounding residential neighborhoods. The proposed changes would also greatly improve access for emergency and non-emergency medical services to Strong Memorial Hospital. Governor Cuomo has included \$26 million for the first phases of reconstruction in his 2012-13 Budget and work is scheduled to begin this year.

The I-390 Interchange Project has significant potential to bring economic benefits to the entire region. Initial estimates show the project may generate 1,660 jobs and produce nearly \$83.5 million in labor income with the primary benefit resulting from the construction related work during implementation of the project. Non-construction or "catalytic" economic impacts have not been quantified. The project may improve land values and make some areas accessible for development that was previously undesirable. In addition to the direct and indirect economic impacts, the project should continue to facilitate the growth of the University, the Medical Center and several other planned expansion efforts.

### **College Town Project (\$100 Million)**

The College Town Project is a comprehensive plan to redevelop 16 acres of University-owned property along Mt. Hope Avenue to create a vibrant neighborhood that will not only serve the University and the surrounding community, but the entire city by providing enhanced amenities in an attractive urban setting that will also serve as a gateway to the University of Rochester.

Like the earlier developments at Brooks Landing and Riverview Apartments, College Town will add strength to another adjoining neighborhood with vitally needed retail and community gathering spaces. It will help enhance the quality of life for students, faculty, and staff and is also part of UR's integral efforts to partner with its neighbors and the City of Rochester to revitalize the areas surrounding the University.

College Town will be approximately 500,000 square foot mixed-use development – combining street-level retail stores, restaurants with outdoor patios, a grocery store, spacious sidewalks, and boutiques, with office space and residences in the floors above. It will include a 150-room hotel and conference center for guests, visitors and patients to Strong Memorial Hospital.

The project is estimated to add 985 construction jobs, 582 permanent jobs and generate close to \$5 million in annual tax revenue.

### **ARTWalk Phase II (\$10.2 Million)**

ARTWalk II builds on the success of the original ARTWalk by extending the permanent urban trail to connect with art centers and public spaces in Rochester's Neighborhood of the Arts. Thanks to support from the federal government, the City of Rochester, ARTWalk, the Memorial Art Gallery and many cultural, educational and business organizations are extending the existing ARTWalk along University Avenue and Goodman Street.

The project plans also include sections of artistic sidewalk trails along University Avenue to the west, and on Goodman Street; a raised pedestrian crosswalk along North Goodman to create a safe connection between the art trail and Village Gate; and a new artistic bus shelter for RTS buses at College Avenue and Goodman Street. A pedestrian welcome plaza at the corner of University and North Goodman on the Memorial Art Gallery grounds will offer seating, lighting, iconic public art and interpretive elements.

The University of Rochester and Stern Properties, which owns Village Gate, will also contribute financially to the project. Mindful of its 2013 Centennial, the Gallery initiated a master planning process for its grounds that would extend its mission, "Connecting People with Art", to include great works of art both inside the building and on its grounds. In response

to many voices from the community, the Gallery proposed the removal of sections of the University and Goodman street fence line and the creation of a \$2.8 million Centennial Sculpture Park. Currently, three major artists have been commissioned. Also, a limestone amphitheater near the Goodman Street and University corner will provide a performance and event space. Even the parking areas have been designed to enhance visitors' aesthetic experience from the moment they arrive on the grounds

Construction began in the spring of 2010. According to the City of Rochester, since ARTWalk began in 2000, neighborhood housing prices have increased by 30 percent and crime has subsided.

### ***Brooks Landing***

Development at Brooks Landing is fundamentally changing the face of Rochester's southwest side. The University, the City of Rochester, neighborhood groups, and private developers all partnered in the development of Brooks Landing – a waterfront development between Brooks Avenue and Genesee Street that includes the 80-room Staybridge Suites hotel as well as a retail and office building occupied in part by the University, a coffee shop, and additional retail space. Nearly 100 University of Rochester finance and human resources employees occupy office space in a 28,000-square-foot two-story business center built at 910 Genesee St. The City's new Brooks Landing public waterfront promenade, street redevelopment and its Neighborhood Service Center with adjacent sporting goods store, along with Boulder Coffee at Brooks Landing, are all part of the Brooks Landing development project and contribute to the ongoing revitalization of the neighborhood. The University is working with the developer on the next phase of the project – a \$20 million, 11-story, 170 bed student housing high-rise that includes a restaurant with a riverfront patio and a separate Visions Federal Credit Union building.

In the summer of 2008, the University and the community also celebrated the opening of the Riverview Apartments, a five-building, 120-unit complex, which is the largest private development in the Brooks-Genesee area in more than four decades. The apartments, leased by the University, provide housing to about 400 University students and help further connect the University to its neighbors across the river.

## **Employees**

For the purposes of this report, employees of University of Rochester include all adjunct faculty, faculty, post-doctoral fellows, research and teaching fellows, medical residents, and staff at the University of Rochester. In addition, all employees of Strong Memorial Hospital, Visiting Nurse Service (VNS), Visiting Nurse Signature Care, Highland Hospital, High Tech Rochester, Excell Partners, Inc., Rochester BioVenture and all three Highlands – Pittsford, Brighton, and the Living

Center. In expressing the economic impact, CGR will refer to this entire body as University of Rochester employees.<sup>9</sup>

The table below provides the employee count as of 12/31/11. This includes full-time, part-time and TAR (time as reported which includes per diem, casual, and temporary) individuals and **is not** a full-time equivalent number. The table does not include graduate students and undergraduate students.<sup>10</sup> Overall, the UR expanded its headcount by 3.3% in 2011 as compared to December 2009.

<b>All Employees of University of Rochester and its Affiliates</b>	
University of Rochester*	19,693
Highland Hospital	2,431
The Highlands**	669
Visiting Nurse Service/Signature Care	677
High Tech Rochester/BioVenture	15
<b>Total</b>	<b>23,485</b>
*Includes Excell Partners, Inc.	
**Includes Highlands at Brighton, Highlands at Pittsford, and Highlands Living Center	

The table below summarizes the full-time equivalent number of UR employees reported on December 31, 2011, including graduate students. The FTE count is 3.7% higher than the end of December 2009.

<b>Full-Time Equivalent of University of Rochester Employees</b>				
Counts by FTE	Full-Time	Part-Time	TAR/Per Diem	Total
University of Rochester*	15,194	1,585	521	17,300
Highland Hospital	1,519	313	184	2,016
The Highlands**	349	67	64	480
Visiting Nurse Service/Signature Care	400	97	32	529
High Tech Rochester/BioVenture	14	1	0	15
<b>Total</b>	<b>17,476</b>	<b>2,063</b>	<b>801</b>	<b>20,340</b>
*Includes Excell Partners, Inc.				
**Includes Highlands at Brighton, Highlands at Pittsford, and Highlands Living Center				

During the 2011 calendar year, UR:

- paid wages of more than \$1.35 billion, of which more than \$1.3 billion was to employees living in the RMSA.

<sup>9</sup> We do not include undergraduate students and graduate students in the employee spending part of the report. Their impact is captured in the student spending component of the report.

<sup>10</sup> Including graduate students, UR provided employment to 26,746 as of 12/31/11.

The geographic distribution of wages for all employees (not including graduate and undergraduate students) is presented in the table below:<sup>11</sup>

<b>Distribution of Wages by Region</b>	
Rochester MSA	\$1,307,192,716
Rochester Finger-Lakes*	\$16,408,483
Rest of NYS	\$14,605,567
Outside NYS	\$6,291,521
Outside USA	\$9,867,808
<b>Total</b>	<b>\$1,354,366,096</b>
*Defined as Allegany, Cattaraugus, Cayuga, Chemung, Genesee, Schuyler, Seneca, Tompkins, or Yates counties.	

CGR only includes the wages of those employees living in the RMSA (\$1.3 billion) to estimate the economic impact of UR on the RMSA. However, it is clear that an employee living in nearby Genesee County, for example, might still spend a large portion of their income in the RMSA. Thus, the economic impact estimates presented later in this report may be slightly underestimated as they do not include any expenses of employees living outside the RMSA. In addition, there are a few employees who have a permanent address outside NYS. However, some of them may rent an apartment as well as buy groceries and gas in the RMSA during the week. Due to the case-by-case nature of these situations, CGR chose to only include those wages of employees with an address/zip code in the RMSA.

In addition, UR provided employment to a total of 8,817 undergraduate and graduate students during the 2011 calendar year for a total of \$40.8 million in wages.

## ***UR is one of New York State's Top Employers***

CGR updated its list of the top private employers in New York State for this report. Since private employee counts are not public information, sources such as various local business journals, market research firms, and the employers themselves were utilized to gather the most accurate information. There were some notable changes in the latest ranking that were likely not due to any significant changes in the companies themselves. CGR was able to obtain better data in some cases (e.g. Verizon, Wegmans and North Shore) and verify other data which lowered rankings in some cases (e.g. New York Presbyterian Hospital). Of note

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<sup>11</sup> CGR redistributed wages of those employees who were not active at the end of the year (retired, terminated, etc.) based on the distribution of the wages of all active employees.

locally, Xerox and Kodak both fell off the list from 2009 partly due to a smaller workforce and partly due to better data on other companies in New York State. Wegmans is now in the top five as better data revealed they were under-counted in our previous list.

The following table represents what CGR believes to be the top 20 private employers in NYS for 2011.

<b>Top 20 Private Employers in NYS 2011</b>		
<b>Full-time equivalent employees located in the state</b>		
Rank	Company Name	NYS Employment
1	North Shore-LIJ Health System	37,000
2	Walmart*	28,000
3	JP Morgan Chase	27,000
4	Wegmans Food Markets Inc.	27,000
5	Verizon	27,000
6	Citigroup	25,000
7	University of Rochester/Medical Center	20,000
8	IBM Corp.	20,000
9	New York-Presbyterian Hospital	19,000
10	Mount Sinai Medical Center	19,000
11	New York University/School of Medicine	18,000
12	Montefiore Medical Center	17,000
13	Macy's Inc	16,000
14	Cornell University/Weil Medical	16,000
15	Columbia University/Medical Center	15,000
16	Morgan Stanley	13,000
17	Consolidated Edison Inc.	12,000
18	Bank of America	12,000
19	Memorial Sloan-Kettering Cancer Center	12,000
20	Merrill Lynch	11,000

\*75% of total reported by Walmart at <http://goo.gl/gaPO> to adjust for likely part-time workers.

UR is ranked the 7<sup>th</sup> largest private employer in New York State with just over 20,000 full time equivalent employees. UR is the top ranked higher education institution on the list. Firms in higher education, health care, retail and the financial services industry make up the majority of the state's largest employers. While half of the firms on the list have operations based in New York City, the remainder are scattered across communities throughout upstate NY.

## Visitors

The University of Rochester hosted visitors throughout the year for events such as Meliora weekend, graduation, concerts, recitals, athletic events, and admission visits. The visitors include alumni; prospective students and their families; family and friends of current students; visiting faculty that

attend conferences or use research equipment; family and friends of Strong Memorial Hospital patients; musicians; athletic opponents and their fans; and UR fans and families of student athletes. Visitors bring new dollars to the Rochester community. Overall during 2011 visitors to UR:

- booked over 21,800 hotel reservations (up 28% from the 2010 study); and
- lodged more than 34,300 hotel nights (up by over 22% from the 2010 study).

The largest events contributing to the visitor impact are discussed below.

### **Admission Visits**

Prospective students represent a significant pool of visitors. The undergraduate admissions office on River Campus estimates that more than 16,000 visitors came to visit during 2011 resulting in approximately 5,750 hotel nights. Between them, the Simon School, Warner School, and URMC brought nearly 1,200 admissions visitors to the area, many of whom stay overnight. The Eastman admissions office also provided tours to approximately 1,000 prospective students during 2011. Many of these people are from out of town and stay overnight in the Rochester area. Most students also bring at least one parent with them.

### **Athletic Events**

Athletic events also draw a large number of visitors, composed of the visiting teammates as well as parents and other spectators from out of town. During the 2011 calendar year, there were 120 home games with over 3,000 visiting teammates, their parents and fans that likely stayed in a hotel. It is difficult to estimate the number of fans and/or parents of players from out of town teams that might stay overnight for an athletic event. Thus, the impact analysis includes conservative estimates of family and friends from out of town.

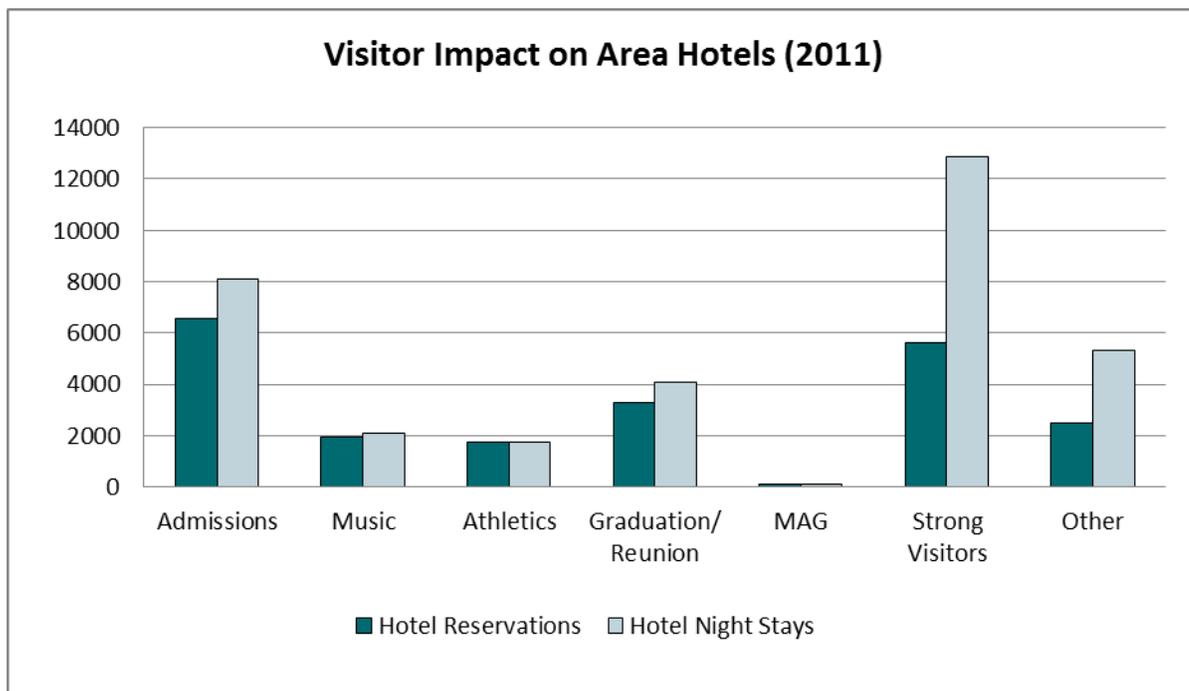
### **Arts**

The Memorial Art Gallery (MAG) had just over 49,500 visitors to their exhibits during 2011; a reduction of approximately 12% from 2009. More than 175,000 people came to MAG for school tours, creative workshops, weddings, corporate events, visits to the gift shop and restaurant, and the annual Clothesline Festival. The Clothesline Festival drew 407 exhibit artists (28 more artists than were previously reported in 2009), many of them from outside the Rochester region.

## Graduation/Alumni Events

Meliora Weekend (MW) is one of the biggest annual events on campus. It is the combined weekend for Homecoming, Family Weekend, and Reunion. In 2011, MW attendees (specifically alumni, parents, and guests) numbering 1,574 came from outside the Rochester region and occupied approximately 787 hotel rooms. These numbers represent a 33% increase in MW since 2009. The average length of stay was three days. These visitors, and any out-of-town visitors to campus, affect the local economy by spending money at places such as hotels, restaurants, retail establishments, gas stations, car rental agencies, and the airport.

Another major visitor event is graduation weekend. The University awarded 2,895 degrees during the May 2011 commencement. The Conference and Events Office at UR estimates five visitors per graduate. Many of these are from out of town and pump out-of-town dollars into the Rochester economy.



## Music

The Kodak Hall at Eastman Theatre draws thousands of outside visitors for a number of different events such as the Rochester Philharmonic Orchestra and local graduation ceremonies. Smaller events such as Eastman School of Music student recitals concerts brought 750 visitors from outside the area, and the Eastman Rochester Organ Initiative Festival had 130 visitors.

The Rochester International Jazz Festival (RIJF) is one of the top attractions of the year, with total attendance growing in 2011 to 182,000, an increase of 36% since 2009. 13,000 of those were for headline concerts at the Kodak Hall at Eastman Theatre and 9,000 were for Kilbourn Hall performances. The 1,000 musicians that come from out of town to perform during the week of the festival also add to the economic and cultural impact of the event.

## **Strong Memorial Hospital**

Visitors to patients of Strong Memorial Hospital also make an economic contribution. The Strong Guest Hotel Services processed 5,646 guest reservations for a total 12,869 hotel nights during 2011.

## **Other**

This category encompasses many visitors for academic conferences. The LLE brought 622 researchers to use the facilities, many of which come from abroad. These researchers typically stay in local hotels for 4 days to perform their research. The URMC also brought in over 3,000 out of town visitors for various conferences and series, accounting for about 1,300 hotel nights. River Campus also hosted summer and group travel events, bringing another 3,000 visitors. While most stayed on campus, it is estimated that these visitors accounted for another 300 hotel night stays.

## **Students**

The students of UR contribute to the economic activity of the Rochester MSA. In particular, during the 2011 spring semester, UR:

- enrolled 8,722 full-time undergraduate and graduate students;
- provided housing to 4,881 undergraduate and graduate students; and
- provided meal plans to 4,833 undergraduate and graduate students.

Many students continue classes during the summer. During the summer of 2011, UR:

- enrolled 2,402 full-time undergraduate and graduate students; and
- provided housing to 1,596 undergraduate and graduate students.

During the 2011 fall semester, UR:

- enrolled 9,221 full-time undergraduate and graduate students;
- provided housing to 4,975 undergraduate and graduate students; and

- provided meal plans to 5,077 undergraduate and graduate students.

The above statistics imply that during the 2011 calendar year more than 3,800 students per semester:

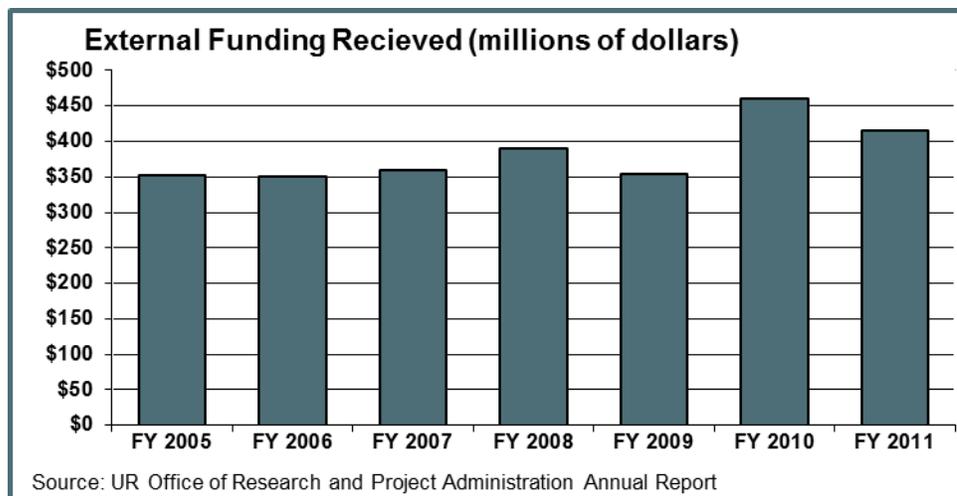
- ate off-campus on a regular basis—spending their money locally to eat in restaurants or shopping at grocery stores; and
- lived off-campus, contributing their living expenses to the Rochester economy.

## Research Funding at University of Rochester

While the University's employment and spending are a critical foundation of the region's economy, also of importance is the catalytic impact of the institution's research enterprise. Research activities – both basic science and clinical research – are an integral part of University of Rochester. Research has become increasingly central to the economic vitality of the Rochester region both today and for the future. The boundaries of “science” are pushed through research and development. In the case of medical research, the research results in improved health care for our community by bringing advances in health care to the practice of medicine in physician offices and hospitals. Whether it's medical research, the research at the LLE facilities, the super computing power of the HSCCI initiative or the many other ongoing research activities across UR's campus, the advances are impressive and help to create intellectual capacity in the Rochester region.

### *Grant Activity at UR*

UR has received nearly \$2.7 billion in external funding (federal and non-federal agencies) over the last seven years. Total awards to University of Rochester averaged \$408 million per year (in constant 2011 dollars) from FY2005 to FY2011. This represents a real growth of 4% from the average computed in the 2010 study. The graph below shows the annual funding to UR during that period. The largest source of UR's sponsored research comes from the federal government and future awards are dependent on the funding decisions made by the U.S. Congress.

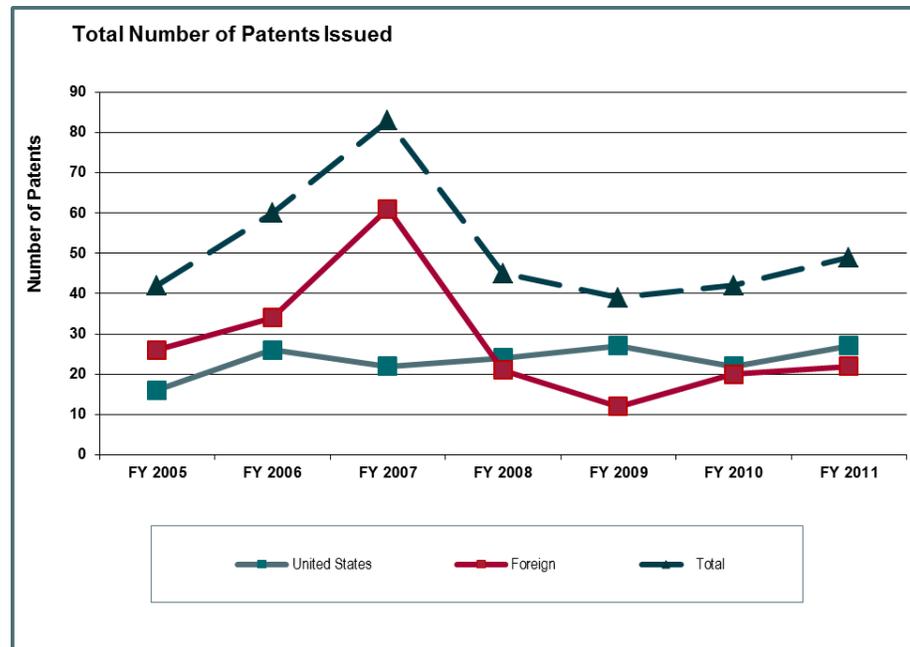


## ***Patents, Royalties, and Start-Ups***

UR's Office of Technology Transfer has experienced strong productivity over the past two years, though down slightly from the high points in 2007-2009. There was small growth from 2010 to 2011 in the total invention disclosures, the number of patents issued, and the royalty revenue earned. This innovation represents a potential pool of intellectual property that can be tapped for economic development purposes.

### ***Patents & Invention Disclosures***

The total number of patents issued has started to rebound since the recent low point in 2009. Foreign patents increased by 83% since 2009. Domestic patents are only slightly more than the seven year average. The chart below depicts the change in total issued patents from FY2005 to FY2011. The cutting-edge research that results in these patents has also produced a number of start-up companies over the past decade.



The total invention disclosures have increased from 2010 to 2011 by around 4%. However, invention disclosures have not rebounded to the high points experienced in 2007-2009 when nearly 150 new disclosures were being reported annually. The decline is primarily driven by the Medical Center, where they have experienced a nearly 20% decline in invention disclosures since FY2007.

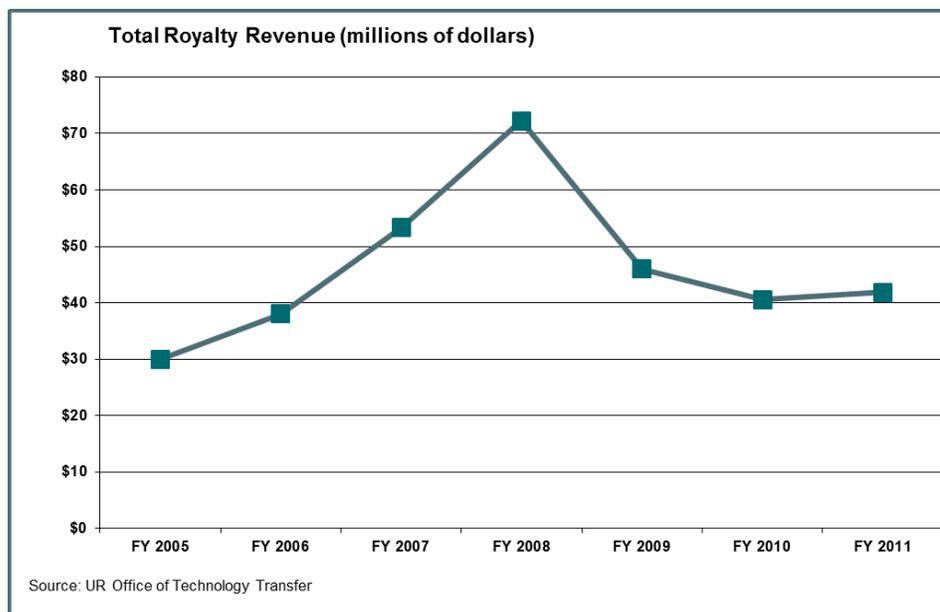
<b>Invention Disclosures</b>							
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
LLE	2	2	5	7	3	2	0
Engineering	32	29	30	26	35	27	35
Arts and Sciences	9	8	7	6	4	7	7
URMC	92	101	107	109	106	87	86
<b>Total</b>	<b>135</b>	<b>140</b>	<b>149</b>	<b>148</b>	<b>148</b>	<b>123</b>	<b>128</b>

### **Royalty Revenue**

Since 2009, UR royalty revenue has declined by 9%. However, according to data from the Association of University Technology Managers (AUTM), the University of Rochester was ranked twelfth nationally in 2010 in terms of licensing revenues.<sup>12</sup> 2011 revenues were down but still ranked 4<sup>th</sup> highest in university history. Revenue generated from royalty payments is reinvested back into the University to support its core missions, as well as its technology commercialization efforts.

<sup>12</sup> 2010 was the most recent available data for this ranking.

In 2011, for every one million dollars in extramural funding, CGR analysis indicates an average of \$100,000 in royalty revenue was generated by UR. According to the 2010 AUTM Annual Report, 183 universities reported a total of \$59 billion in research expenditures for a total of \$2 billion in licensing revenue. These data imply that, on average, each institution receives approximately \$29,500 in royalty revenue per \$1 million in extramural funding.<sup>13</sup> At more than three times the average for 2011, UR's royalty revenue is clearly on the cutting edge in terms of licensing revenue from research expenditures.

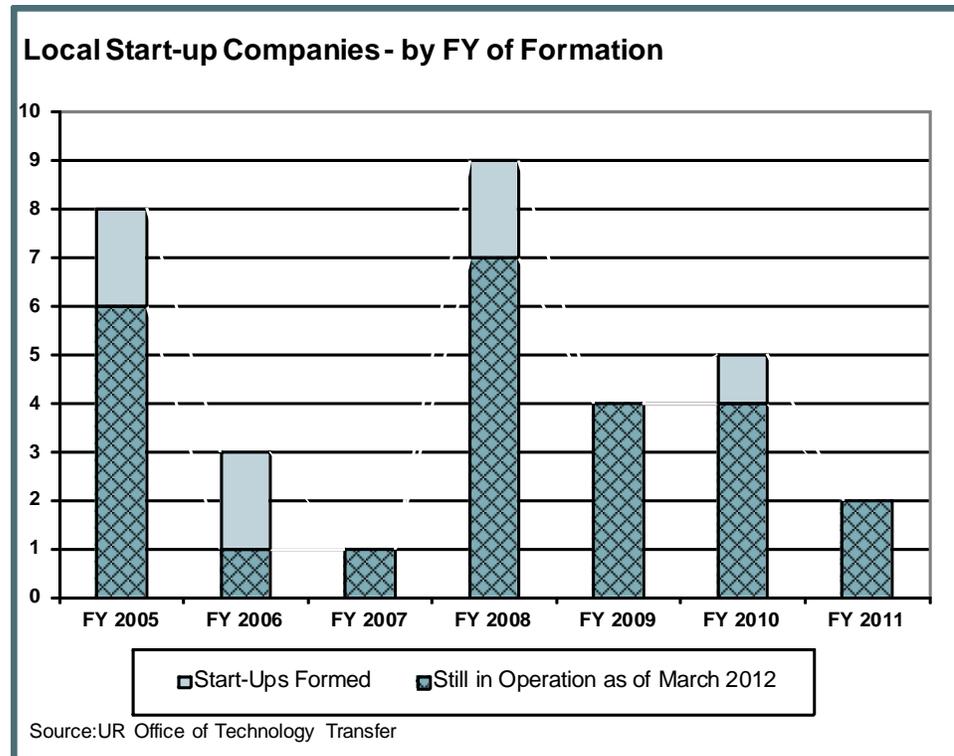


### **Start-up Companies**

University of Rochester's potential as an economic catalyst is realized by the commercial ventures that emerge from its research programs. Because these new companies often remain closely tied to ongoing research and university-based faculty, many remain in the region. With proper support and resources, these companies can form the critical mass necessary to attract outside investment and skilled workers and make the region a hub for technology research and industry.

From FY2005 through FY2011, there have been a total of 32 start-up companies formed as a result of research at the University of Rochester, both the River campus and URM. Of those 32 companies, 25 are still operating in the Rochester area.

<sup>13</sup> CGR recognizes the inherent lag between royalty revenue and research expenditures. The calculations provided are to present a steady state number for a point in time.



## Regional Support for Technology Commercialization

Excell Partners, an affiliate of the UR, is a regional economic development partnership established in cooperation with UR and NYS to manage a state-supported fund which provides pre-seed and seed stage financing to high-tech start-up companies in the upstate NY region. Since its inception in 2005, Excell has invested \$2.7 million in 22 companies throughout the Upstate region. Total co-investor and follow on funding for these companies has resulted in \$145 million with the potential for additional economic growth in the region.

High Technology Rochester (HTR), an affiliate of the UR, provides a wide array of support services for technology companies such as market assessment, business plan development, management coaching, capital access, and resource connections. HTR also operates two technology incubators; the Lennox Tech Enterprise Center and the Rochester BioVenture Center, the latter on behalf of the University of Rochester.

HTR, the Empire State Development/New York State Foundation for Science and Technology Innovation Regional Technology Development Center for the Finger Lakes region, also provides services to manufacturers through the Manufacturing Extension Partnership, a national program supported by the U.S. Department of Commerce and New York State. HTR has helped launch 76 high potential start-ups

through its multi-year, intensive incubation program, and has provided additional assistance to hundreds of other local entrepreneurs.

## ***Health Sciences Center for Computational Innovation***

In 2010, the University entered into a partnership with IBM to establish a \$100 million supercomputing center dedicated to applying high performance computing solutions to the nation's health challenges. The Health Sciences Center for Computational Innovation (HSCCI) is designed to bring together scientific, medical and computational resources to create the most powerful computer system dedicated to health care in the nation.

The HSCCI generates economic impact from external funding:

- (1) through the staff dedicated to operating the HSCCI facility;
- (2) through competition for new National Institutes of Health (NIH) funding as well as the retention of some existing NIH funding;
- (3) through competition for other science-based research funding throughout UR;
- (4) through collaboration with private sector companies who have the potential to locate operations in proximity to HSCCI; and
- (5) through increased technology transfer which ultimately generates new business and royalty revenues.

The catalytic benefits will grow over time as the HSCCI initiative is implemented. CGR has selected the 10<sup>th</sup> year after implementation as the point in time at which to measure the annual "steady state" economic impact.

### ***HSCCI Staff***

In order to operate the HSCCI and provide support to visiting researchers, UR will develop a staff dedicated to HSCCI activities. In the 10<sup>th</sup> year after implementation, such a staff is intended to consist of an executive director, three computational scientists and three system administrators. Payroll information for these positions was provided by UR. The following tables illustrate both the direct and spillover effects on employment, payroll, income tax and sales tax.

<b>HSCCI Staff Impacts</b>				
	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
<b>Employment</b>	7	3	5	15
<b>Payroll (\$1000)</b>	\$600	\$100	\$200	\$900
<b>Income Tax Revenue (\$1000)</b>	\$19	\$4	\$4	\$27
<b>Sales Tax Revenue (\$1000)</b>	\$10	\$3	\$4	\$17

### **Health Grants and Contracts**

The primary form of funding that will be affected by the HSCCI is R01 grants. An R01 grant is a funding award granted by the NIH providing support for health-related research and development based on the mission of the NIH. Such grants usually carry a five-year term and yield annual research funding of \$250,000.

UR staff estimated that with the establishment of HSCCI, one new R01 grant will be created per year until the 10<sup>th</sup> year, when steady state is reached. Upon expiration of each grant over the ten years, the open capacity will accommodate an additional grant that will use the resources made available by the expiring grant.<sup>1415</sup> According to NIH, facilities and administrative costs will be reimbursed at the rate of 53% of research funding granted.

It is also assumed that the existence of HSCCI will increase UR's competitiveness for R01 grants, help retain R01 funding at UR that might have otherwise been lost to other competing institutions, and open up other sources of grant and contract funding. In other words, without the establishment of HSCCI, existing grantees will fall behind researchers at other institutions who compete for similar funding and in turn lose the ability to continue to attract the current level of R01 funding. The following tables illustrate both the direct and spillover effects on employment, payroll, income tax and sales tax. These assumptions are predicated on stable, sustained support for federal biomedical research.

<sup>14</sup> i.e. in year 6, two new grant cycles begin instead of one

<sup>15</sup>Based off of actual funding experience in 2011, these estimates were too conservative because of other non-R01 grant money and contracts that have been attracted due to the HSCCI. Thus, CGR's estimates have been increased based upon actual grant and contract activity in 2011.

Employment Impacts		
	Low	High
Direct	90	200
Indirect	20	50
Induced	50	100
<b>Total</b>	<b>160</b>	<b>350</b>

Payroll Impacts (\$1000)		
	Low	High
Direct	\$7,800	\$16,700
Indirect	\$1,600	\$3,400
Induced	\$2,300	\$4,900
<b>Total</b>	<b>\$11,700</b>	<b>\$25,000</b>

Income Tax Revenue (\$1000)		
	Low	High
Direct	\$220	\$470
Indirect	\$40	\$80
Induced	\$40	\$80
<b>Total</b>	<b>\$300</b>	<b>\$630</b>

Sales Tax Revenue (\$1000)		
	Low	High
Direct	\$150	\$320
Indirect	\$30	\$60
Induced	\$40	\$90
<b>Total</b>	<b>\$220</b>	<b>\$470</b>

### Other Science-based External Funding

Supercomputing has proven an attractive mode of research for not only health sciences, but other research sciences as well. HSCCI will have an impact on competitiveness for science-based external funding throughout the university, specifically in the schools of Arts & Sciences, Hajim School of Engineering & Applied Sciences, and in the Laboratory for Laser Energetics.

It is estimated that HSCCI will have a similar effect on other science-based external funding as it will have on R01 grants, but to a lesser degree—between 25% (low) -75% (high) of the magnitude. The following tables illustrate both the direct and spillover effects on employment, payroll, income tax and sales tax.

Employment Impacts		
	Low	High
Direct	5	16
Indirect	2	6
Induced	4	11
<b>Total</b>	<b>11</b>	<b>33</b>

Payroll Impacts (\$1000)		
	Low	High
Direct	\$500	\$1,400
Indirect	\$100	\$300
Induced	\$100	\$400
<b>Total</b>	<b>\$700</b>	<b>\$2,100</b>

Income Tax Revenue (\$1000)		
	Low	High
Direct	\$13	\$40
Indirect	\$2	\$6
Induced	\$1	\$3
<b>Total</b>	<b>\$16</b>	<b>\$49</b>

Sales Tax Revenue (\$1000)		
	Low	High
Direct	\$9	\$30
Indirect	\$2	\$6
Induced	\$3	\$8
<b>Total</b>	<b>\$14</b>	<b>\$44</b>

### Private Companies

Many private companies that make extensive investments in research and development are likely to take advantage of HSCCI and its resources. A similar center at the University of Illinois at Urbana-Champaign called the National Center for Supercomputing Applications (NCSA) has experienced such partnerships with private companies and found that such companies put a high value on proximity to such a facility. As an example, NCSA's collaboration with Caterpillar Inc. led to Caterpillar establishing its global simulation center adjacent to NCSA. This facility employs 48 full-time equivalent scientific research and development employees. For purposes of this study, we assume that the employees of similar facilities in Rochester would earn an average wage of around \$58,800 per year.

HSCCI is likely to attract similar investments in the vicinity of its facility, generating economic benefits for the surrounding area. CGR estimates the impact for a low of 0.5 and high of 5.0 Caterpillar-type installations. The following tables illustrate both the direct and spillover effects on employment, payroll, income tax and sales tax.

Employment Impacts		
	Low	High
Direct	20	240
Indirect	10	90
Induced	20	160
<b>Total</b>	<b>50</b>	<b>490</b>

Payroll Impacts (\$1000)		
	Low	High
Direct	\$1,400	\$14,100
Indirect	\$300	\$3,100
Induced	\$400	\$4,200
<b>Total</b>	<b>\$2,100</b>	<b>\$21,400</b>

Income Tax Revenue (\$1000)		
	Low	High
Direct	\$30	\$350
Indirect	\$2	\$20
Induced	\$3	\$30
<b>Total</b>	<b>\$35</b>	<b>\$400</b>

Sales Tax Revenue (\$1000)		
	Low	High
Direct	\$30	\$270
Indirect	\$10	\$60
Induced	\$10	\$80
<b>Total</b>	<b>\$50</b>	<b>\$410</b>

### Technology Transfer

Although the impacts of technology transfer are important, they are not likely to be measurable and significant for a period of many years. As such, CGR does not sum the increase in licensing revenue with the overall estimate of economic impact.

For the purposes of this study, CGR estimates that the \$7.7 million to \$17.2 million in institutional research funding created and retained by HSCCI will eventually drive between \$670,000 and \$1.5 million in annual licensing revenue for UR. Other results in terms of intellectual property output are displayed in the following table.

<b>Technology Transfer Results from HSCCI</b>		
	<b>Low</b>	<b>High</b>
Research funding (\$M)	\$7.66	\$17.17
Invention disclosures	2	5
Patent applications	3	7
Patents granted	1	2
Licenses and options executed	0	1
Licensing income (\$M)	1	2

### **Conclusion**

The HSCCI and its catalytic investments are expected to have a substantial impact on the University of Rochester and the research environment of the surrounding area. All the individual components of the project's impacts total to provide a range of estimated impacts as outlined below.

<b>Employment Impacts</b>		
	<b>Low</b>	<b>High</b>
Direct	130	460
Indirect	40	150
Induced	70	270
<b>Total</b>	<b>240</b>	<b>880</b>

<b>Payroll Impacts (\$1000)</b>		
	<b>Low</b>	<b>High</b>
Direct	\$10,300	\$32,900
Indirect	\$2,100	\$6,900
Induced	\$3,000	\$9,800
<b>Total</b>	<b>\$15,400</b>	<b>\$49,600</b>

<b>Income Tax Revenue (\$1000)</b>		
	<b>Low</b>	<b>High</b>
Direct	\$290	\$880
Indirect	\$50	\$120
Induced	\$50	\$120
<b>Total</b>	<b>\$390</b>	<b>\$1,120</b>

<b>Sales Tax Revenue (\$1000)</b>		
	<b>Low</b>	<b>High</b>
Direct	\$200	\$630
Indirect	\$40	\$130
Induced	\$60	\$190
<b>Total</b>	<b>\$300</b>	<b>\$950</b>

On the high end, HSCCI could generate 880 new jobs with labor income in excess of \$49 million. New York State would benefit with additional income and sales tax revenue in excess of \$2 million combined. The outcome assessed here is the potential annual steady state impact of all investments anticipated due to the establishment of HSCCI.\*

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\* These estimates assume that these initiatives are funded with new sources of money and that funds devoted to the HSCCI and its investments do not reduce economic activity in some other sector of the UR. As it seems probable that there will be at least some displacement, these estimates should be viewed accordingly.

## Community Investment in the Region

The UR enhances our community in many ways that go unnoticed to the public. Investments in public health, K-12 education, commercial ventures, and home ownership are just some of the many ways the UR contributes to the vitality of our community.

### *Brooks Landing, Riverview, Mortgage Support*

The UR's footprint and influence extends well beyond the immediate Riverview campus. Across the Genesee River to the west, the Brooks Landing Project has emerged as an anchor for a community that has been in transition for many years. UR students are the only occupants for the Riverview Housing complex on Genesee Street and UR is the largest lessee in the Brooks Landing commercial space on the west side of the river. For several years they have also encouraged home ownership in Sectors 4 and 6 by contributing incentive grants to staff that purchase in the area. The table below summarizes these investments for 2011.

Riverview Student Housing	\$7.4M Lease
Brooks Landing Leases (Office and Conference)	\$2.3M Lease
Mortgage Support in Sector 4 and 6: <i>Supported 168 mortgages in 2011</i>	\$504K

### *Admissions Support for City School Students*

The struggle of city school children in the Rochester community to graduate high school and attend college is a well-documented fact. Through several different outreach efforts, the UR encourages students in the Rochester City School District by offering incentive scholarships to attend the UR. The scholarships are based upon participation in city schools (including private and charter) and offer up to a full tuition scholarship to attend the UR upon completion of high school. Nearly \$1.8 million annually is set aside for these initiatives.

Rochester Promise and Wilson Scholarships plus additional financial aid for Rochester City School Students	\$1.2M annually
Additional aid for City students in non-public schools (charter, private)	\$500K
Outreach programs for City School students	\$87K

### *Hospital Contributions to the Community*

The full value of the URMC goes beyond just providing the highest quality care to its patients - it includes improving access to health care

services, educating the next generation of providers and strengthening the social and economic health of the community. Through the URM's community outreach programs, which take on greater importance in an era of health care reform and economic hardship, the URM is targeting the high-risk Medicaid population to improve prevention and management of chronic disease, reduce costs, eliminate health disparities and improve outcomes.

According to the IRS, the URM provides over \$451 million<sup>16</sup> in community benefits and services. These include discounted and unreimbursed health care and services to our most vulnerable populations through Strong and Highland Hospitals, partnerships with Monroe County, the faith community, and other partners to eliminate racial disparities in immunization rates, lead poisoning research and abatement in inner-city housing, operating and supporting school-based health clinics including one at East High School that provides a full range of primary care and behavioral health services, providing dental services to inner-city and rural youth through the Eastman Institute of Oral Health's Smile Mobile and dental outreach clinics, tobacco cessation programs, to just name a few. The URM also supports numerous free health care clinics, vaccinations, breast cancer screenings, and physicals every year. While many of these efforts go unnoticed, the investment is substantial, unique to this community, and represents one more way that the UR enhances the life of our community.

## METHODOLOGY

CGR used IMPLAN, a regional input-output modeling system, for estimating the economic impact. IMPLAN is widely acknowledged as one of the best models of economic activity available. The IMPLAN database, created by MIG, Inc., consists of two major parts: 1) a national-level technology matrix and 2) estimates of sectorial activity for final demand, final payments, industry output and employment for each county in the U.S. along with state and national totals. Data are updated annually. IMPLAN estimates the direct, indirect and induced impacts of economic change through the use of multipliers, and estimates the impact of an increase in demand in a particular sector on 440 different industries/sectors of the local economy.

CGR provides the economic impact in terms of labor income and employment (number of jobs). In addition, we estimate the fiscal impact in terms of sales tax revenue and personal income tax (both to NYS and

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<sup>16</sup> Some of this money is research dollars that have been previously reported in the section on "Grant Activity at UR".

Rochester MSA). The economic impact is reported in two portions: direct and spillover.

In calculating the economic impact, CGR only includes the wages of those employees living in the RMSA, though we recognize that many employees living just outside of the RMSA (e.g. Leroy in Genesee County) spend some of their wages inside the RMSA. Given the definition of the RMSA and the case-by-case nature of these situations, CGR chose to include only wages for employees who resided in the RMSA based upon zip code.

*Note: Between CGR's previous study completed in 2010 (based upon 2009 calendar year data) and the current study (based upon 2011 calendar year data), the IMPLAN model updated the underlying tables used to determine the relationships between sectors for employment and labor income. In some cases, the updated tables produced multiplier impacts that were different from the previous study. CGR is confident that the current models represent an accurate picture of the total economic impact. However, since the results of this study differ from the 2010 study, the differences must be understood not just in terms of the change in data provided by the University, but also in terms of the underlying changes in the model used to calculate the impacts.*

## Direct Impact

The direct economic impact consists of the actual expenditures of the University of Rochester in the community—i.e., the institution is directly involved with the transaction. Added to the direct expenditures is the local spending of students and visitors to campus and/or the hospital. Examples of direct expenditures include:

- University of Rochester's payroll expenditures for faculty, physicians, staff, residents, and students;
- University of Rochester's purchases of goods and services from a variety of suppliers; and
- University of Rochester's payment to a construction firm for a capital improvement project (new building).

## Spillover Impact

Spillover expenditures result from the subsequent spending of the recipients of the direct expenditures. For example, a vendor company that supplies a product or service to the University of Rochester uses the proceeds of that sale to make expenditures of its own, typically for both materials and labor. Similarly, employees of the University of Rochester spend their wages, which become income for other businesses in the

region. These types of expenditures are categorized as spillover. Specific examples of types of spillover impacts include:

- The firm hired to construct a new building buys materials from local businesses. The local businesses will, in turn, have income to hire workers. Those workers will then spend money in the community. The spending of the businesses affected by the construction, and also the spending of the employees of those businesses, is considered spillover.
- A resident or lab tech purchases dinner in a restaurant, and the restaurant then uses the money to pay suppliers or staff.

## “Traded Sector” Impacts: Implications for Clinical Revenue

The goal of any economic impact study is to assess how the economy in question is larger as a consequence of the activity being studied. In layman’s terms the question posed is this: How would the economy be smaller if the activity were to disappear?

In answering this question, economists distinguish between economic activities that bring dollars into a region from those that simply reallocate dollars already “earned” from other regions. A new grocery, for example, will not attract shoppers from another region. Income to support a grocery must be earned some other way. A new grocery will only reallocate spending from another store. When the University of Rochester Medical Center (URMC) enters into a contract to conduct a clinical trial of a new pharmaceutical, however, the community receives dollars that could just as easily have gone to Houston or Cleveland or Rochester, Minnesota.

While this is an important distinction, it is impossible to divide every dollar of revenue flowing to a complex institution like the University of Rochester according to source. For example, strictly speaking, tuition from students who would have attended Nazareth College had they not been accepted at the University of Rochester should be excluded from the impact assessment. We do not have the information available to make this kind of distinction.

One adjustment that CGR has made in this analysis, however, is in health services revenue. Consistent with the many previous studies of the economic impact of URMC, CGR distinguishes between clinical service revenue to Strong or Highland hospitals that would likely be earned in the local economy anyway if these hospitals were to close. Routine surgery—an appendectomy, for example—would be performed in the Rochester area regardless. Yet Strong’s highly regarded (and quite large) liver transplant program is unusual and attracts patients from outside the region.

Local residents who receive liver transplants would otherwise travel to another city if Strong did not provide this service.

The traded sector can be defined as those aspects of UR that would disappear if UR were not in existence. There are certain portions on the clinical side of URMC that would still remain in the community if it were to close. The need for routine medical procedures, for example, would be satisfied by other health care providers were these services not available from URMC. Employees related to these types of procedures are considered “local” and are not counted in the economic impact analysis of the traded sector. The “traded sector” is defined as those elements of UR that expand the economy and attract additional income from outside the region.

URMC staff estimate that about one third of clinical revenue flowing to Strong Memorial Hospital is highly specialized. This is the component of the clinical service revenue that CGR includes as part of the University’s unique contribution to the Rochester economy.

## ECONOMIC AND FISCAL IMPACT ESTIMATES

CGR provides economic impact estimates for two scenarios. The first scenario assumes that every component of UR will provide an economic impact (local and traded sector combined). The second scenario is a more conservative estimate of the economic impact and only considers the impact on the traded sector of UR, as estimated by CGR.

### Employment Impacts

The employment impact can be interpreted as the number of jobs—direct and spillover— within the Rochester MSA that are attributed to UR. CGR reports employment impacts in terms of thousands of jobs.

- If one considers the traded sector only, CGR estimates that UR and its affiliates generate more than 31,500 jobs (direct and spillover) in Rochester MSA.

<b>Economic Impact on Rochester: Traded Sector Only</b>			
Employment (thousands of jobs)	Direct	Spillover	Total
Employee Spending	14.3	12.3	26.5
Purchasing	0.9	0.5	1.4
Capital Expenditures	1.5	1.1	2.5
Student Spending	0.6	0.2	0.9
Visitor Spending	0.1	0.0	0.1
<b>Total</b>	<b>17.4</b>	<b>14.1</b>	<b>31.5</b>

- For both the local and traded sector combined, over 47,000 jobs (direct and spillover) are generated in the Rochester MSA.

<b>Economic Impact on Rochester: Local and Traded Sector Combined</b>			
Employment (thousands of jobs)	Direct	Spillover	Total
Employee Spending	23.5	17.9	41.3
Purchasing	1.5	0.8	2.4
Capital Expenditures	1.5	1.1	2.5
Student Spending	0.6	0.2	0.9
Visitor Spending	0.1	0.0	0.1
<b>Total</b>	<b>27.2</b>	<b>20.1</b>	<b>47.3</b>

The UR continues to expand its footprint and impact on the Rochester economy. Since the 2010 study, the UR's impact on jobs has increased by 1% when considering either the traded sector only or the local and traded sector combined.

## Labor Income Impacts

Jobs—many well-paid—translate into paychecks for the thousands of employees identified above. The wages spent by employees fuel the economy in countless ways.

CGR estimates UR helps to generate:

- more than \$1.7 billion in wages (direct and spillover) to the Rochester region in the traded sector; and

<b>Economic Impact on Rochester: Traded Sector Only</b>			
Labor Income (millions of dollars)	Direct	Spillover	Total
Employee Spending	\$895.3	\$597.3	\$1,492.6
Purchasing	\$48.7	\$20.9	\$69.6
Capital Expenditures	\$74.3	\$52.4	\$126.7
Student Spending	\$19.0	\$11.1	\$30.1
Visitor Spending	\$2.1	\$1.4	\$3.4
<b>Total</b>	<b>\$1,039.4</b>	<b>\$683.0</b>	<b>\$1,722.4</b>

- more than \$2.4 billion in wages (direct and spillover) in the Rochester region to the local and traded sector combined.

<b>Economic Impact on Rochester: Local and Traded Sector Combined</b>			
Labor Income (millions of dollars)	Direct	Spillover	Total
Employee Spending	\$1,307.2	\$870.1	\$2,177.3
Purchasing	\$78.3	\$36.3	\$114.6
Capital Expenditures	\$74.3	\$52.4	\$126.7
Student Spending	\$19.0	\$11.1	\$30.1
Visitor Spending	\$2.1	\$1.4	\$3.4
<b>Total</b>	<b>\$1,480.9</b>	<b>\$971.2</b>	<b>\$2,452.1</b>

Wage impact has grown by 6% since the 2010 study.

## Fiscal Impact

CGR's estimates of the fiscal impact of University of Rochester and its affiliates show that the UR helps to generate:

- more than \$102 million in sales tax, personal income tax, and local property taxes to RMSA and NYS when considering the traded sector only.

<b>University of Rochester Impact on New York State: Traded Sector Only</b>			
Millions of Dollars	Direct	Spillover	Total
NYS and Local Sales Tax	\$27.0	\$17.8	\$44.8
NYS Personal Income Tax	\$39.7	\$16.5	\$56.2
Local Property Tax paid by UR	\$1.2	N/A	\$1.2
<b>Total</b>	<b>\$68.0</b>	<b>\$34.3</b>	<b>\$102.2</b>

The labor income of the local and traded sector combined helps to generate:

- approximately \$143 million in sales tax, personal income tax, and local property taxes to RMSA and NYS.

<b>University of Rochester Impact on New York State: Local and Traded Sector Combined</b>			
Millions of Dollars	Direct	Spillover	Total
NYS and Local Sales Tax	\$38.5	\$25.3	\$63.8
NYS Personal Income Tax	\$53.9	\$23.4	\$77.4
Local Property Tax paid by UR	\$1.7	N/A	\$1.7
<b>Total</b>	<b>\$94.2</b>	<b>\$48.7</b>	<b>\$142.9</b>

As much as any numbers in this report, the fiscal impact numbers are the most susceptible to the recent economic recession. UR's overall numbers have increased, but it is likely that they could have been even higher were it not for the recession and the depressed nature of sales tax collections in the RMSA.

## CONCLUSION

The economic impact of the University of Rochester and its affiliates on the Rochester community is substantial. The local and traded sector impact accounts for almost 9% of the labor force in the RMSA.

In 2011, the Rochester MSA had an official unemployment rate of 7.4%<sup>17</sup>. When considering only the traded sector, UR and its affiliates employ or generate employment for over 31,500 people. Without those jobs, the unemployment rate could have been 13% in the RMSA as they represent nearly 6% of the labor force in the RMSA:

The addition of the HSCCI super-computing capacity opens up new avenues of research that should gain national attention and will increase the economic impact of the university. All of these stats collectively highlight that the University of Rochester is a driving economic force in the Rochester community. Not only is it our most important economic institution in the current economy, its continued vitality and expansion has become a foundation on which the growth of many sectors can be founded.

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<sup>17</sup> Source for Labor Force: Local Area Unemployment Statistics (LAUS) – Bureau of Labor Statistics for 2011 RMSA. This is defined as those actively employed or actively looking for work and does not include discouraged workers, so thus may underestimate the true labor force.