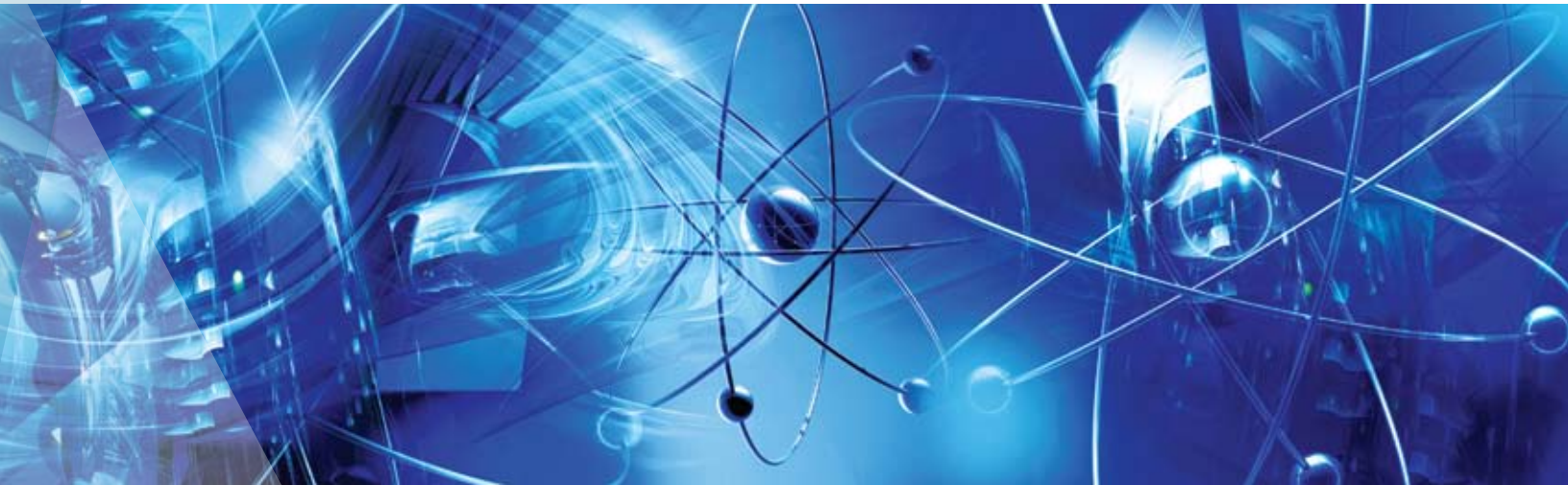




BRIEF ON THE STATE OF NORTHEAST OHIO'S HIGH-TECH ECONOMY



F E B R U A R Y 2 0 0 9

The full report, prepared for NorTech by the
Center for Economic Development,
Maxine Goodman Levin College of Urban Affairs,
Cleveland State University,
is available at www.nortech.org

Highlights of Northeast Ohio's High-Tech Economy

Science and technology are precious seeds of innovation which drive our high-tech economy and form the foundation for long term and sustainable economic growth. Innovation fuels prosperity in the high-tech sector leading to increased demand throughout the entire supply chain which strengthens all sectors of our economy.

NorTech believes that it is important to track and monitor changes in the high-tech sector in order to provide a basis for assessing progress. For the past three years, NorTech has commissioned researchers at the Center for Economic Development in the Maxine Goodman Levin College of Urban Affairs at Cleveland State University to study the high-tech economy in Northeast Ohio. Key findings from the most recent report are:

In 2007, the High-Tech Sector in NEO Represents 170,602 Jobs or 8.5% of the Region's Economy

Between 2004 and 2007, Employment in the High-Tech Sector in NEO is up 2.7% While Overall Employment is Down 0.2%

The High-Tech Sector in NEO Leads the Midwest and the U.S. in Productivity Gains Between 2004 and 2007

NEO Universities Posted 39% Growth Rate in Research Expenditures from 2000 to 2006, Outpacing the U.S. and the Midwest

Challenges Remain: High-Tech Employment Growth Rate in NEO Falls Short of the Midwest and the U.S.

The full report, Northeast Ohio High-Tech Economy Report, is available at www.nortech.org

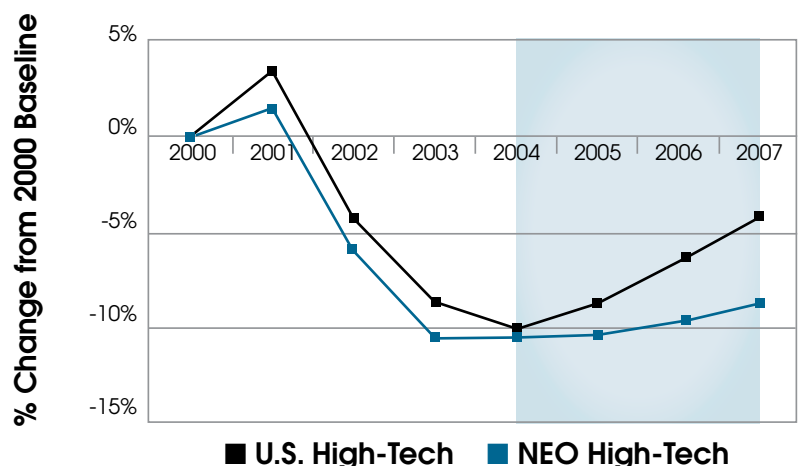
These latest findings, especially when considered with other positive developments, offer much cause for optimism about our region's future. Venture capital continues to flow. Northeast Ohio claims more Third Frontier funds than any region in the state. Resources and services to help entrepreneurs are on the rise. Collaboration among private industry and academia is thriving. State tax reforms have dramatically reduced burdens on business. The entire ecosystem of support for high-tech companies—both start-ups and larger, more mature and traditional companies—has improved in recent years. At the same time, there is much concern about the current macroeconomic environment, the credit crunch and the general difficulties throughout the global economy. These factors will no doubt have some unknowable impact on the high-tech sector in Northeast Ohio, as they will on every sector of the economy, in the months and years to come.

We believe our region will prosper only to the extent that our public, nonprofit and private sectors can work together to better harness the levers of innovation, improve the available talent pool, continue to invest in science and technology and reduce the barriers to greater collaboration—across personal, organizational and geographic boundaries. Future prosperity in our region depends on how much progress we can make on all these fronts.

We should pause here to say a few words about the time period covered in this report. Early in this decade, high-tech sector employment in Northeast Ohio and across the U.S. fell sharply as a result of the last recession. In this report, we decided to study the period from 2004 to 2007 since 2004 marked the reversal of the downward trend in the high-tech sector in the U.S. and 2007 represents the most recent employment data available at the time the research was conducted.

Source: Quarterly Census of Employment and Wages (ES202)

High-Tech Employment Index (%): 2000-2007

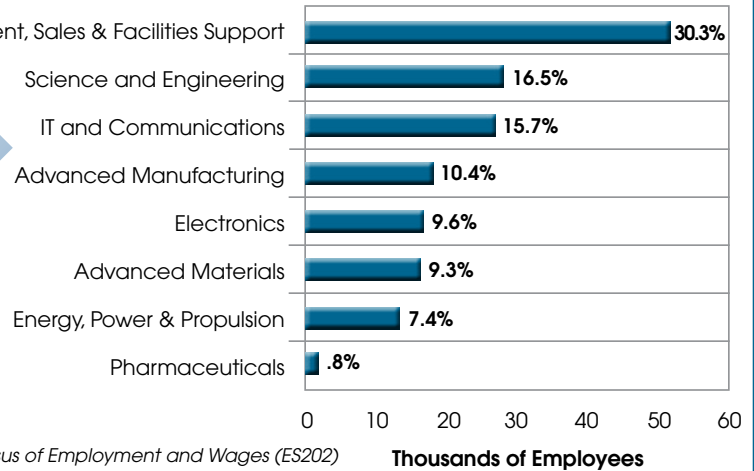
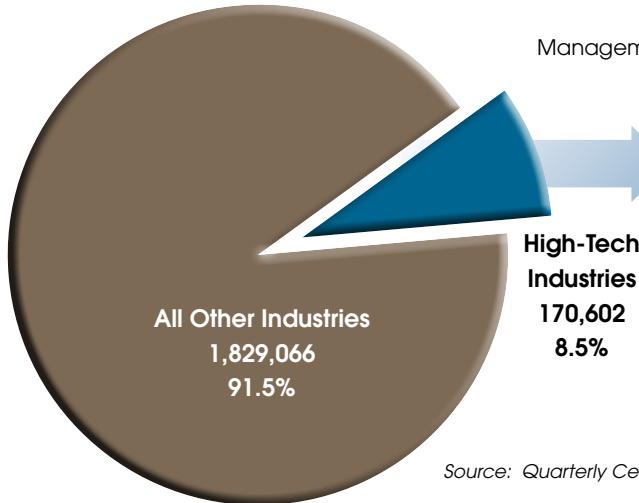


The High-Tech Sector in Northeast Ohio Represents 170,602 Jobs or 8.5% of the Region's Economy

In 2007, total employment in Northeast Ohio stood at 1,999,668, with 170,602 jobs credited to the high-tech sector, representing 8.5% of our regional economy. The high-tech sector in the Midwest and U.S., represent 9.0% and 9.5%, respectively, of the total economy. Taking a closer look at those 170,602 jobs, NorTech organized the high-tech sector into 8 distinct groups.

2007 Employment In NEO (TOTAL: 1,996,668)

High-Tech Industries by Group



Source: Quarterly Census of Employment and Wages (ES202)

Random Sample of Companies in the High Tech Sector

Management, Sales and Facilities Support

PartsSource, Inc.
 Associated Materials Inc.
 ASI Investment Holding Co.
 Siemens Medical Solutions USA, Inc.
 The Goodyear Tire & Rubber Co.
 Steris Corporation
 Parker Hannifin Corporation

Science and Engineering

Middough Consulting Inc.
 ZIN Technologies, Inc.
 Ricerca Biosciences LLC

IT and Communications

Hyland Software Inc.
 Intuit Inc.
 Oracle Corp.
 Brulant Inc.
 Quadax Inc.

Advanced Manufacturing

Lincoln Electric Co.
 Parker Hannifin Corporation
 Gorman-Rupp Co.
 FMC Foodtech Inc.
 Demag Cranes & Components

Electronics

Rockwell Automation
 Keithley Instruments Inc.
 Apsco Inc.
 Therm-O-Disc Inc.
 Energy Systems, North America Inc.

Advanced Materials

Lubrizol Corporation
 PolyOne Corp.
 Henkel Adhesive Technologies
 PPG Industries Inc.
 Sherwin-Williams Automotive Finishes

Energy, Power and Propulsion

Parker Hannifin Corporation
 Airborne Division
 CertainTeed Corp.
 Meggitt Aircraft Braking Systems
 TransDigm Group Inc.

Pharmaceuticals

Ben Venue Laboratories Inc.
 Oakwood Laboratories L.L.C.
 Gebauer Company
 USB Corporation

Sources: LexisNexis Academic and Hoover's, a D & B Company

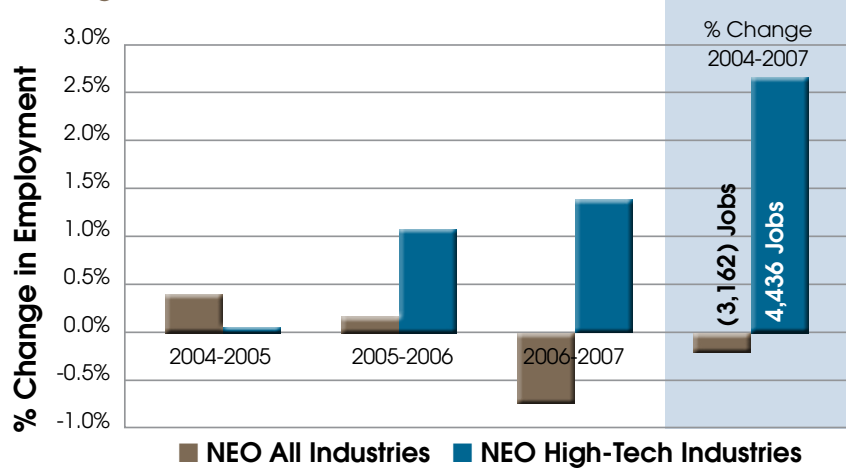
The U.S. Bureau of Labor Statistics Definition of High-Tech Does Not Capture the Full Scope of the Bioscience Sector in Northeast Ohio

Based on an expanded definition of the Bioscience sector used by BioOhio (which includes pharmaceuticals and therapeutics, agricultural biotechnology, medical devices & equipment manufacturers, testing labs, R&D, and medical labs & diagnostic imaging centers), the research revealed that employment in the Bioscience sector in 2007 was 12,739. Only a portion of these jobs were included in the high-tech employment data reported above. Please refer to the full report for a comprehensive analysis of the Bioscience sector.

Between 2004 and 2007, Employment in Northeast Ohio's High-Tech Sector is up 2.7% While Overall Employment is Down 0.2%

Employment in Northeast Ohio's high-tech sector is up 2.7% since 2004, even as the region saw an overall decline of 0.2% in employment across all industries during the same period. In absolute terms, Northeast Ohio added 4,436 jobs in the high-tech sector between 2004 and 2007 while losing 3,162 jobs overall. In 2007, total employment in the 21-county region was 1,999,668, with 170,602 jobs in the high-tech sector.

Change in Employment (%): 2004 - 2007

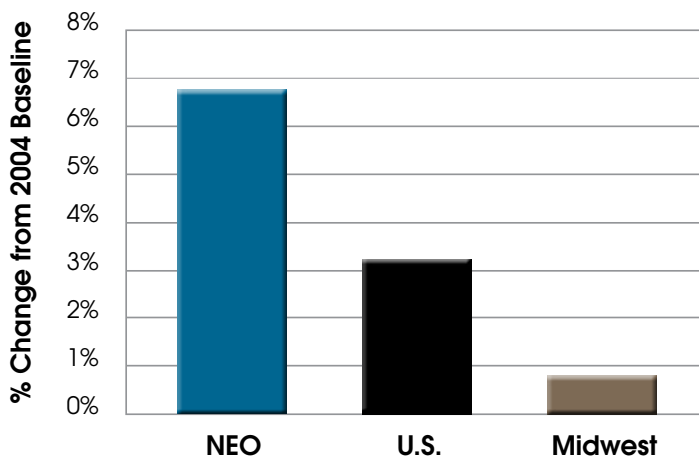


Source: Quarterly Census of Employment and Wages (ES202)

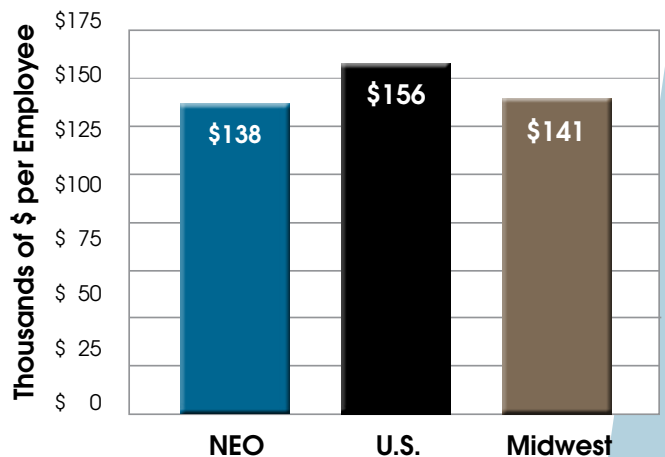
High-Tech Sector in Northeast Ohio Leads the Midwest and the U.S. in Productivity Gains

The gross regional product (GRP), the value of all goods and services produced, in the high-tech sector in Northeast Ohio has been growing faster than in the Midwest and in the U.S. The number of jobs created and retained is obviously very important, but another key driver of long term global competitiveness is productivity, which represents the value of the goods and services produced per worker. While the absolute level of productivity in Northeast Ohio lags the U.S. and is slightly behind the Midwest, between 2004 and 2007 productivity in the region grew 7½ times faster than in the Midwest and 2 times faster than in the U.S. Clearly Northeast Ohio is closing the gap.

Productivity Growth Rate (%): 2004 - 2007



Productivity (Thousands \$ per Employee): 2007

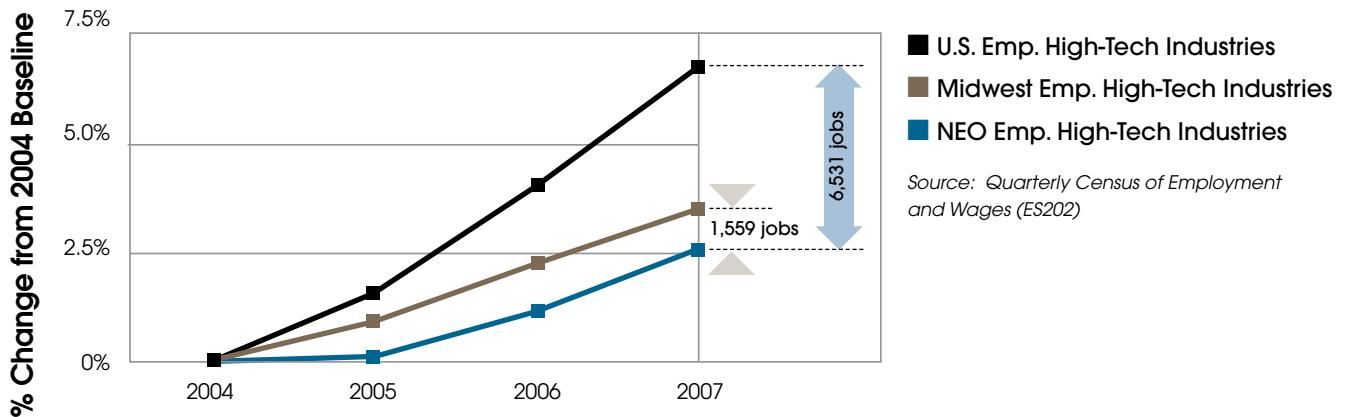


Source: Mood's Economy.com

Challenges Remain: High-Tech Employment Growth Rate in Northeast Ohio Falls Short of the Midwest and the U.S.

Although high-tech employment in Northeast Ohio was up 2.7% between 2004 and 2007, high-tech employment was up 3.6% in the Midwest and 6.6% in the U.S., over the same period. To achieve the same growth rate as in the Midwest, Northeast Ohio would have had to increase high-tech employment by 1,559 more jobs. To achieve the same growth rate as in the U.S., Northeast Ohio would have had to increase high-tech employment by 6,531 more jobs.

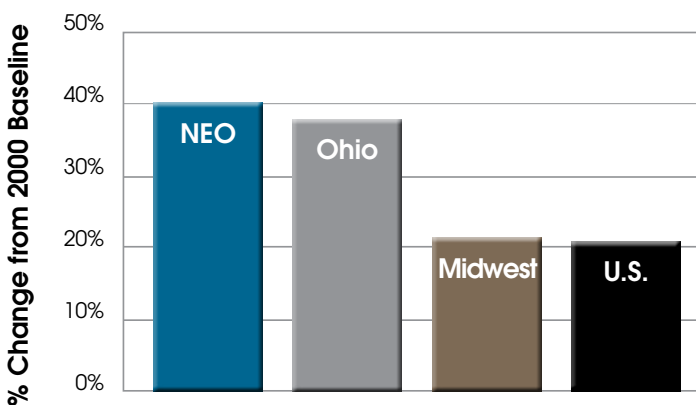
High-Tech Employment Index (%): 2004 - 2007



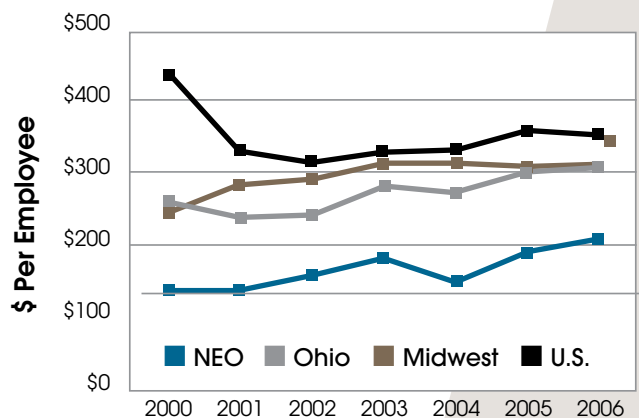
Northeast Ohio Universities Post 39% Growth Rate in Research Expenditures from 2000 to 2006, Outpacing the U.S. and the Midwest

Research and development in universities, institutions and private enterprises drive invention and commercialization of new technology that in turn drives growth in our high-tech economy. Estimates of R&D performed by industries between 2000 and 2006 showed that industrial R&D expenditures in Northeast Ohio increased by 9% while the Midwest and the U.S. posted overall decreases. Research funding in our colleges and universities continued to show impressive gains in recent years. Between 2000 and 2006, academic research expenditures increased 39% in Northeast Ohio, leading the state of Ohio and far surpassing the Midwest and the U.S. The level of academic research expenditures in 2006 in NEO, Ohio, Midwest and U.S., was \$432M, \$1,636M, \$7,401M and \$47,760M, respectively. Although the overall growth rate in Northeast Ohio is compelling, Northeast Ohio is attracting fewer research dollars per employee than Ohio, the Midwest and the U.S.

Increase in Academic Research Expenditures (%): 2000 - 2006



Per Capita Academic Research Expenditures (\$ per Employee): 2000 - 2006

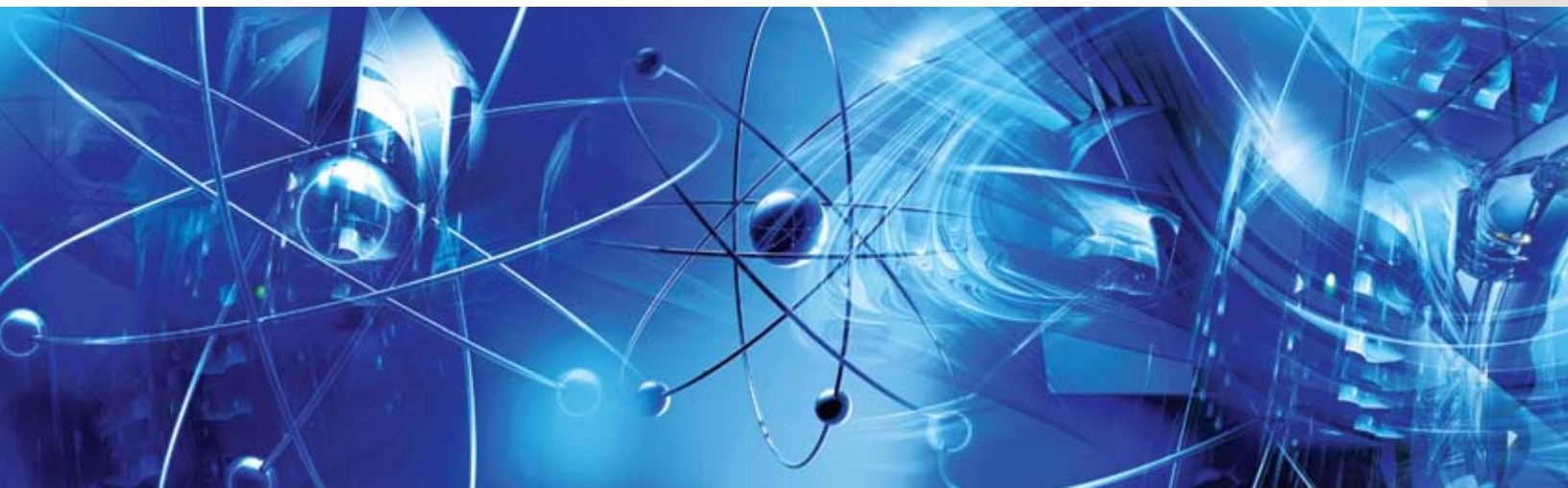


Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges, FY 2000-2006

About the Research

The full report from which this brief is drawn, Northeast Ohio High-Tech Economy Report, (available on our website www.nortech.org) carefully compares Northeast Ohio's high-tech sector with those of the Midwest region (Indiana, Illinois, Michigan, Minnesota, Ohio and Wisconsin) and the U.S., from the perspective of employment, output, productivity and wages in high-tech industries. It also tracks research and development activity, a crucial foundation of all technology activity. The researchers use a definition of high-tech industries developed by Daniel Hecker, an economist at the U.S. Bureau of Labor Statistics. He identified 46 industries as being high-tech, with the qualifier that employment in technology-oriented occupations accounted for a proportion of the industry's total employment that was at least twice the average for all industries. By using an accepted standard to define high-tech industries, we can then compare our region with other regions, states and the U.S.

The research for this report was conducted by the Center for Economic Development in the Maxine Goodman Levin College of Urban Affairs at Cleveland State University. For more information about the Center, go to www.urban.csuohio.edu/economicdevelopment.



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NorTech-Shaping Northeast Ohio's Technology Future

NorTech leads the technology agenda for a 21 county region within Northeast Ohio. NorTech's mission is to build a vibrant and globally-competitive economy by serving as the strategic voice and catalyst for technology based economic development (TBED) in Northeast Ohio. NorTech accomplishes its mission by linking and leveraging the region's technology, entrepreneurship and innovation assets to make Northeast Ohio one of the top ten places in the world to learn, innovate, and invest.