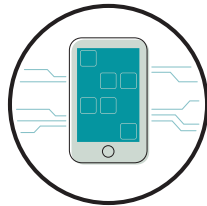
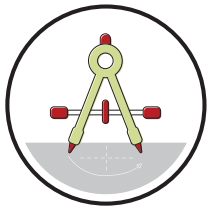


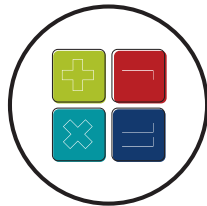
SCIENCE



TECHNOLOGY



ENGINEERING



MATHEMATICS

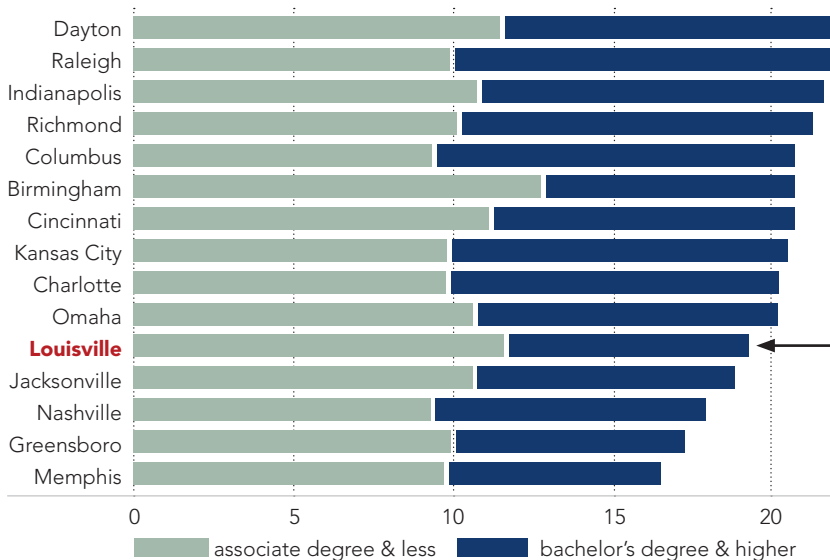
STEM Jobs are a driver of GROWTH in an Innovation Economy

Especially in metropolitan areas across the United States, **economic growth** in the 21st Century is being driven by **technology** and **innovation**. Powered by workers skilled in STEM fields – Science, Technology, Engineering, & Math – cities that cultivate an Innovation Economy are strongly associated with indicators of economic growth and international competitiveness.

Louisville looks to grow 21st Century Jobs while increasing educational attainment.

The Greater Louisville Project is examining the types of degrees and jobs that are most critical to growth in an Innovation Economy.

% OF JOBS REQUIRING STEM-RELATED DEGREES OR TRAINING



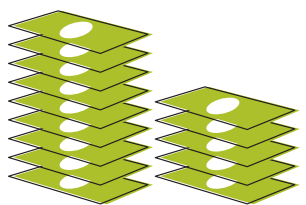
STEM-ORIENTED COMMUNITIES...

- ✓ HAVE LOWER UNEMPLOYMENT
- ✓ ENJOY HIGHER INCOMES
- ✓ EXPERIENCE LESS INCOME INEQUALITY
- ✓ EARN MORE NEW PATENTS
- ✓ EXPORT MORE GOODS & SERVICES

LOUISVILLE RANKS **11TH** AMONG PEER CITIES

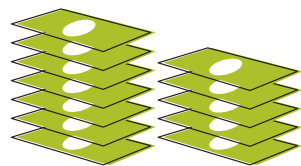


WAGES IN LOUISVILLE



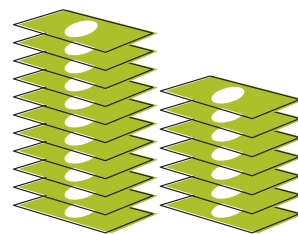
STEM \$59,568
NON-STEM \$35,783

ALL JOBS



STEM \$48,416
NON-STEM \$30,927

REQUIRING ASSOCIATE DEGREE OR LESS



STEM \$74,644
NON-STEM \$59,847

REQUIRING BACHELOR'S DEGREE OR HIGHER

STEM Jobs = Higher Wages

Greater economic effects within a city are seen when there are higher numbers of STEM workers. Data indicate that STEM jobs pay more on average than non-STEM jobs, with the same educational requirements. In Louisville, a job requiring a degree in a STEM field pays, on average, 66% more than a job requiring a degree in a non-STEM field.



Degrees Awarded in STEM Fields

Louisville is strong in its production of STEM degrees, including sub-associate, associate, bachelor and doctoral, compared with peer cities. In 2011, nearly 40 percent of all post-secondary degrees awarded were in STEM fields, placing Louisville 5th in comparison. However, when tracking only bachelor's and above, we drop to 11th among peers, indicating an area of opportunity for overall STEM job preparedness.

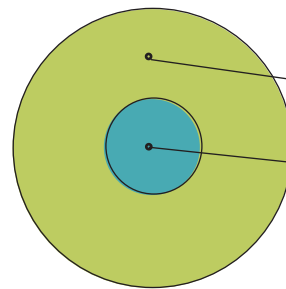
% ALL STEM-RELATED DEGREES AWARDED *		% STEM-RELATED DEGREES BACHELOR'S OR HIGHER	
Dayton	51.2	Raleigh	70.4
Birmingham	44.4	Omaha	67.9
Indianapolis	43.5	Birmingham	55.1
Jacksonville	39.9	Columbus	53.1
Louisville	39.6	Richmond	51.2
Kansas City	39.4	Greensboro	48.8
Raleigh	39.2	Nashville	45.0
Cincinnati	38.5	Indianapolis	43.9
Memphis	38.1	Cincinnati	43.0
Columbus	37.8	Charlotte	35.8
Omaha	37.0	Louisville	35.3
Richmond	36.0	Kansas City	34.4
Nashville	34.8	Dayton	30.4
Charlotte	33.3	Memphis	27.8
Greensboro	27.1	Jacksonville	24.5

* Includes all sub-associate through doctorate degrees

Employers Need Qualified Workers

The U.S. Department of Commerce reported that between 2001 and 2011, STEM jobs grew at three times the rate of non-STEM jobs, a trend that's expected to continue. Over the next several years, STEM jobs – including those in healthcare – will outpace many other fields. Much of that increase will be in occupations requiring associate degrees or less, suggesting that workforce training and STEM education at all levels will be increasingly important.

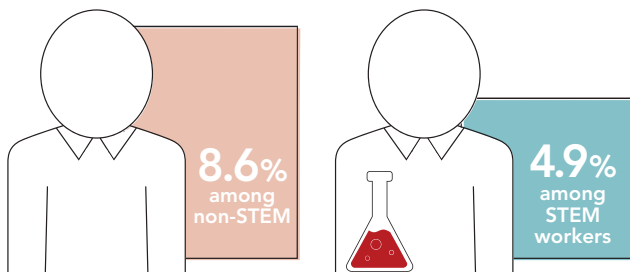
There currently are about 4 million open jobs in the United States – many of them requiring STEM skills. Employers report there is a skills gap and not enough qualified workers to fill vacancies.



STEM jobs grew at three times the rate **non-STEM jobs** did from 2001–2011

Louisville Unemployment: Lower for STEM Workers

Despite a high national unemployment rate, data show that Louisville-based STEM workers enjoy considerably lower rates of unemployment—a trend true among our peer cities as well, as noted in the chart to the right.



UNEMPLOYMENT PERCENTAGE	STEM	NON-STEM	OVERALL RATE
Omaha	2.6	5.6	5.0
Columbus	4.0	6.5	6.0
Indianapolis	4.1	8.0	7.3
Cincinnati	4.2	8.1	7.3
Kansas City	4.2	7.3	6.7
Raleigh	4.3	6.9	6.3
Memphis	4.4	9.3	8.5
Nashville	4.7	7.0	6.5
Dayton	4.8	8.7	7.9
Louisville	4.9	8.6	8.0
Birmingham	5.4	8.8	8.1
Richmond	5.5	5.9	5.8
Charlotte	6.2	9.3	8.7
Jacksonville	6.2	9.3	8.7
Greensboro	7.9	9.0	8.8

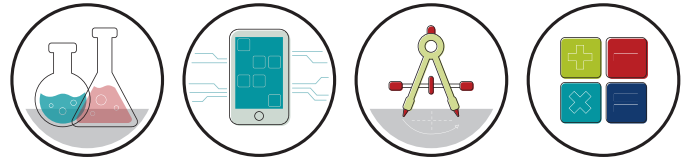


Efforts Underway: Locally and Nationally

Cities are focused on ways of minimizing the skills gap –from growing a STEM skilled workforce to increasing the number of STEM graduates – particularly at the bachelor’s degree level and higher.

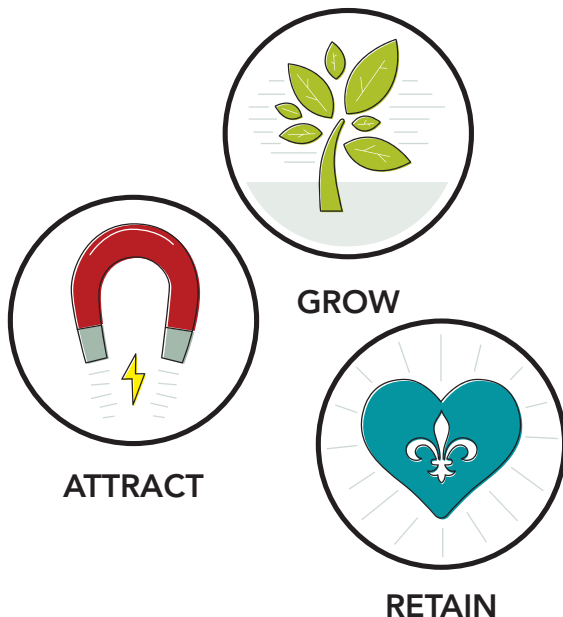
Primary and postsecondary education institutions such as Jefferson County Public Schools and Jefferson Community & Technical College are leading innovative initiatives supporting STEM education that are designed to lay the foundation for STEM workforce development by KentuckianaWorks and others.

Nationally, programs like 100Kin10 are working to train 100,000 STEM teachers by 2021 while federal government programs such as the Community College to Career Fund and Educate to Innovate support development of a stronger, more skilled 21st century workforce.



The Bluegrass Economic Advancement Movement (BEAM) Report

– recently released by the mayors of Louisville and Lexington and coordinated by the Brookings Institution – highlights the need for more STEM graduates in Kentucky. For example, it sets as a goal to double the number of engineers graduating from Kentucky universities.



STEM: Long-term Progress for Louisville

As Louisville strives to increase percentage of STEM jobs available while maintaining our top tier position among peer cities for production of STEM degrees, alignment of skilled workforce and STEM jobs is necessary for positioning Louisville strongly in the Innovation Economy.

Continued investment in education, skills training, and 21st century workforce development – as well as focused pursuit and execution of strategies that **grow, attract, and retain** firms that employ STEM workers – will help Louisville advance as a more competitive city today and well into the future.

For more than a decade, The Greater Louisville Project has provided research and data analysis to catalyze action and engage the community in a shared agenda for long-term progress. The GLP is an independent, non-partisan initiative supported by a consortium of philanthropic foundations including The James Graham Brown Foundation, Brown-Forman, The C. E. & S. Foundation, Lift a Life Foundation, The Community Foundation of Louisville, The Humana Foundation, The Owsley Brown Family Foundations, The Stephen Reily and Emily Bingham Fund, The Gheens Foundation and JP Morgan Chase Foundation. The report was prepared by staff of the Greater Louisville Project: Christen Boone, Krista Drescher-Burke, and Rebecca Brady. Data sources and citations can be found online at www.greaterlouisvilleproject.org.