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## **STEM OCCUPATIONAL EMPLOYMENT AND WAGES IN NEW ENGLAND- MAY 2014**

Among the eight selected metropolitan areas in New England, only the Boston-Cambridge-Quincy New England City and Town Area (the Boston NECTA) had wages that were significantly above the national average for systems software developers, the U.S. Bureau of Labor Statistics reported today. Regional Commissioner Deborah A. Brown noted that the Boston NECTA also had wages for mechanical engineers and wholesale and manufacturing sales representatives of technical and scientific products that were significantly higher than the respective national averages. Nationwide, the average (mean) wage for systems software developers was \$106,050; for mechanical engineers, \$87,140; and for wholesale and manufacturing sales representatives of technical and scientific products, \$86,750. (See table A. This release contains data on selected science, technology, engineering, and mathematics – STEM -- occupations. A list of occupations included in the STEM definition used for this release is available at [www.bls.gov/oes/stem\\_list.xlsx](http://www.bls.gov/oes/stem_list.xlsx). For comprehensive definitions of New England metropolitan areas, please see Technical Note.)

**Table A. Average (mean) annual wages for selected STEM occupations in the United States and metropolitan areas in New England, May 2014**

Area	Software Developers, Systems Software	Mechanical Engineers	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
United States.....	\$106,050	\$87,140	\$86,750
Bridgeport-Stamford-Norwalk.....	94,970*	85,630	113,270*
Hartford-West Hartford-East Hartford.....	95,220*	84,830	92,660*
New Haven.....	90,700*	78,140*	88,870
Boston-Cambridge-Quincy.....	115,210*	94,280*	97,190*
Boston-Cambridge-Quincy Division.....	116,270*	93,510*	97,660*
Framingham Division.....	111,240*	96,780*	115,920*
Lowell-Billerica-Chelmsford Division.....	117,930*	93,710*	91,990
Springfield.....	87,780*	83,730	77,770*
Worcester.....	111,670	78,760*	89,760
Portland-South Portland-Biddeford.....	94,570*	85,070	73,470*
Providence-Fall River-Warwick.....	107,830	90,340	85,340

Note: An asterisk indicates that the mean annual wage for this area is significantly different from the national average of all areas at the 90-percent confidence level.

The Boston NECTA had a combined employment of 48,090 in the three selected STEM occupations. The Boston-Cambridge-Quincy division (the Boston MD) had a combined employment of 32,820, while the Framingham division (the Framingham MD) and the Lowell-Billerica-Chelmsford division (the Lowell MD) had a combined employment of 6,560 and 3,100, respectively. Among the other selected metropolitan areas in New England, Hartford-West Hartford-East Hartford and Bridgeport-Stamford-Norwalk had a combined employment of 4,740 and 4,120, respectively, for the three occupations. Combined employment was less than 4,000 in each of the remaining selected metropolitan areas in New England. (See table B.)

Location quotients (LQ's) allow us to explore the occupational make-up of a metropolitan area by comparing the composition of jobs in an area relative to the national average. For example, a location quotient of 2.0 indicates that an occupation accounts for twice the share of employment in the area than it does nationally.

The Boston NECTA and its three divisions had above-average LQ's for the three selected STEM occupations. For systems software developers, the Framingham MD had a LQ of 9.7, meaning that systems software developers were employed at almost 10 times the national rate. The Lowell MD had a LQ of 4.1 and the Boston MD had an LQ of 3.7. (See table B.) For mechanical engineers, the Framingham MD had an LQ of 3.4 and the Lowell MD had an LQ of 2.6. For wholesale and manufacturing sales representatives of technical and scientific products, the Lowell MD had a LQ of 3.8 and the Framingham MD had a LQ of 2.5.

**Table B. Employment of selected STEM occupations in the United States and metropolitan areas in New England, May 2014**

Area	Software Developers, Systems Software		Mechanical Engineers		Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	
	Total employment	Location quotient	Total employment	Location quotient	Total employment	Location quotient
United States.....	382,400	1.0	270,700	1.0	335,540	1.0
Bridgeport-Stamford-Norwalk.....	1,650	1.4	1,000	1.2	1,470	1.4
Hartford-West Hartford-East Hartford.....	1,550	1.0	1,780	1.6	1,410	1.0
New Haven.....	470	0.6	480	0.9	1,100	1.6
Boston-Cambridge-Quincy.....	25,940	3.5	8,270	1.6	13,880	2.2
Boston-Cambridge-Quincy Division.....	18,600	3.7	5,290	1.5	8,930	2.0
Framingham Division.....	4,470	9.7	1,090	3.4	1,000	2.5
Lowell-Billerica-Chelmsford Division.....	1,380	4.1	610	2.6	1,110	3.8
Springfield.....	270	0.3	570	1.0	540	0.8
Worcester.....	1,050	1.5	550	1.1	850	1.4
Portland-South Portland-Biddeford.....	220	0.4	200	0.5	510	1.0
Providence-Fall River-Warwick.....	1,860	1.2	1,190	1.1	930	0.7

### **Wages for systems software developers in selected New England metropolitan areas**

The Boston NECTA (\$115,210) was the only metropolitan area where wages for systems software developers were significantly above the national average of \$106,050. All three of the divisions within the Boston NECTA had above-average wages. Five metropolitan areas had wages that were significantly lower than the U.S. average, of which Springfield (\$87,780) and New Haven (\$90,700) were among the lower-paid. Systems software developers in the remaining two areas earned wages that were not measurably different from the U.S. average.

### **Wages for mechanical engineers in selected New England metropolitan areas**

Wages for mechanical engineers in the Boston NECTA, at \$94,280, were significantly higher than the national average of \$87,140. The three divisions in the Boston NECTA had above-average wages for mechanical engineers. In contrast, wages in the New Haven (\$78,140) and Worcester (\$78,760) metropolitan areas were significantly below the national average. In the remaining five areas, earnings for mechanical engineers were not measurably different from the U.S. average.

### **Wages for wholesale and manufacturing sales representatives of technical and scientific products in selected New England metropolitan areas**

Bridgeport (\$113,270), Boston (\$97,190), and Hartford (\$92,660) had wages that were significantly higher than the national average of \$86,750 for wholesale and manufacturing sales representatives of technical and scientific products. The Boston and Framingham divisions also had significantly higher wages. Portland-South Portland-Biddeford (\$73,470) and Springfield (\$77,770) had wages that were significantly lower than the national average. Earnings for wholesale and manufacturing sales representatives of technical and scientific products in the remaining three metropolitan areas were not significantly different from the national average.

These statistics are from the Occupational Employment Statistics (OES) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this case, the Connecticut Department of Labor, the Maine Department of Labor, the Massachusetts Department of Unemployment Assistance, the New Hampshire Department of Employment Security, and the Rhode Island Department of Labor and Training.

#### **Statistical Significance**

A value that is statistically different from another does not necessarily mean that the difference has economic or practical significance. Statistical significance is concerned with the ability to make confident statements about a universe based on a sample. It is entirely possible that a large difference between two values is not significantly different statistically, while a small difference is, since both the size and heterogeneity of the sample affect the relative error of the data being tested.

#### **Technical Note**

The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. Guam, Puerto Rico, and the Virgin Islands are also surveyed, but their data are not included in the national estimates. OES estimates are constructed from a sample of about 1.2 million establishments. Forms are mailed to approximately 200,000 sampled establishments in May and November each year. May 2014 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2014, November 2013, May 2013, November 2012, May 2012, and November 2011. The overall national response rate for the six panels is 74.3 percent based on establishments and 70.5 percent based on weighted sampled employment. The unweighted employment of sampled establishments across all six semiannual panels represents approximately 57.1 percent of total national employment. (Response rates are slightly lower for these estimates due to the federal shutdown in October 2013.) For more information about OES concepts and methodology, go to [www.bls.gov/news.release/ocwage.tn.htm](http://www.bls.gov/news.release/ocwage.tn.htm).

The OES survey provides estimates of employment and hourly and annual wages for wage and salary workers in 22 major occupational groups and 821 detailed occupations for the nation, states, metropolitan statistical areas, metropolitan divisions, and nonmetropolitan areas. In addition, employment and wage estimates for 94 minor groups and 458 broad occupations are available in the national data. OES data by state and metropolitan/nonmetropolitan area are available from [www.bls.gov/oes/current/oesrcst.htm](http://www.bls.gov/oes/current/oesrcst.htm) and [www.bls.gov/oes/current/oesrcma.htm](http://www.bls.gov/oes/current/oesrcma.htm), respectively.

The May 2014 OES estimates are based on the 2010 Standard Occupational Classification (SOC) system and the 2012 North American Industry Classification System (NAICS). Information about the 2010 SOC is available on the BLS website at [www.bls.gov/soc](http://www.bls.gov/soc) and information about the 2012 NAICS is available at [www.bls.gov/bls/naics.htm](http://www.bls.gov/bls/naics.htm).

## **Metropolitan area definitions**

The substate area data published in this release reflect the standards and definitions established by the U.S. Office of Management and Budget.

**Boston -Cambridge-Quincy, Mass.-N.H. NECTA** includes applicable cities and towns in the following divisions: Boston-Cambridge-Quincy, Mass. NECTA Division, Brockton-Bridgewater-Easton, Mass. NECTA Division, Framingham, Mass. NECTA Division, Haverhill-North Andover-Amesbury, Mass. NECTA Division, Lawrence-Methuen-Salem, Mass.-N.H. NECTA Division, Lowell-Billerica-Chelmsford, Mass.-N.H. NECTA Division, Nashua, N.H.-Mass. NECTA Division, Peabody, Mass. NECTA Division, and the Taunton-Norton-Raynham, Mass. NECTA Division.

**Boston-Cambridge-Quincy, Mass. NECTA Division** includes Acton town, Andover town, Arlington town, Ayer town, Bedford town, Belmont town, Beverly city, Bolton town, Boston city, Boxborough town, Boxford town, Braintree town, Brookline town, Burlington town, Cambridge city, Canton town, Carlisle town, Carver town, Chelsea city, Cohasset town, Concord town, Dedham town, Dover town, Duxbury town, Essex town, Everett city, Foxborough town, Franklin city, Gloucester city, Groton town, Hamilton town, Hanover town, Harvard town, Hingham town, Holbrook town, Hull town, Ipswich town, Kingston town, Lexington town, Lincoln town, Littleton town, Lynnfield town, Malden city, Manchester by the Sea town, Mansfield town, Marshfield town, Maynard town, Medfield town, Medford city, Medway town, Melrose city, Middleton town, Millis town, Milton town, Needham town, Newbury town, Newburyport city, Newton city, Norfolk town, North Reading town, Norwell town, Norwood town, Pembroke town, Plymouth town, Quincy city, Randolph town, Reading town, Revere city, Rockland town, Rockport town, Rowley town, Saugus town, Scituate town, Sharon town, Sherborn town, Shirley town, Somerville city, and Stoneham town, Stoughton town, Stow town, Sudbury town, Topsfield town, Wakefield town, Walpole town, Waltham city, Watertown city, Wayland town, Wellesley town, Wenham town, Weston town, Westwood town, Weymouth town, Wilmington town, Winchester town, Winthrop town, Woburn city, and Wrentham town in Massachusetts.

**Framingham , Mass. NECTA Division** includes Ashland town, Berlin town, Framingham town, Holliston town, Hopedale town, Hopkinton town, Hudson town, Marlborough city, Mendon town, Milford town, Natick town, Southborough town, and Upton town in Massachusetts.

**Lowell-Billerica-Chelmsford, Mass.-N.H. NECTA Division** includes Billerica town, Chelmsford town, Dracut town, Dunstable town, Lowell city, Tewksbury town, Tyngsborough town, and Westford town in Massachusetts; and Pelham town, New Hampshire.

**Bridgeport-Stamford-Norwalk, Conn. Metropolitan Statistical Area (MSA)** includes Ansonia city, Bridgeport city, Darien town, Derby city, Easton town, Fairfield town, Greenwich town, Milford city, Monroe town, New Canaan town, Newtown town, Norwalk city, Oxford town, Redding town, Ridgefield town, Seymour town, Shelton city, Southbury town, Stamford city, Stratford town, Trumbull town, Weston town, Westport town, Wilton town, and Woodbridge town in Connecticut.

**Hartford-West Hartford-East Hartford, Conn. MSA** includes Andover town, Ashford town, Avon town, Barkhamsted town, Berlin town, Bloomfield town, Bolton town, Bristol city, Burlington town, Canton town, Colchester town, Columbia town, Coventry town, Cromwell town, East Granby town, East Haddam town, East Hampton town, East Hartford town, Ellington town, Farmington town, Glastonbury town, Granby town, Haddam town, Hartford city, Hartland town, Harwinton town, Hebron town, Lebanon town, Manchester town, Mansfield town, Marlborough town, Middlefield town, Middletown city, New Britain city, New Hartford town, Newington town, Plainville town, Plymouth town, Portland town, Rocky Hill town, Simsbury town, South Windsor town, Southington town, Stafford town, Thomaston town, Tolland town, Union town, Vernon town, West Hartford town, Wethersfield town, Willington town, and Windsor town in Connecticut.

**New Haven, Conn. MSA** includes Bethany town, Branford town, Cheshire town, Chester town, Clinton town, Deep River town, Durham town, East Haven town, Essex town, Guilford town, Hamden town, Killingworth town, Madison town, Meriden city, New Haven city, North Branford town, North Haven town, Old Saybrook town, Orange town, Wallingford town, West Haven city, and Westbrook town in Connecticut.

**Portland-South Portland-Biddeford, Maine MSA** includes Alfred town, Arundel town, Baldwin town, Biddeford city, Buxton town, Cape Elizabeth town, Casco town, Cornish town, Cumberland town, Dayton town, Falmouth town, Freeport town, Frye Island, Gorham town, Gray town, Hiram town, Hollis town, Kennebunk town, Kennebunkport town, Limerick town, Limington town, Long Island town, Lyman town, Naples town, New Gloucester town, North Yarmouth town, Old Orchard Beach town, Parsonsfield town, Porter town, Portland city, Pownal town, Raymond town, Saco city, Scarborough town, Sebago town, South Portland city, Standish town, Waterboro town, Westbrook city, Windham town, and Yarmouth town in Maine.

**Providence -Fall River-Warwick, R.I.-Mass. MSA** includes Attleboro city, Bellingham town, Blackstone town, Fall River city, Millville town, North Attleborough town, Plainville town, Rehoboth town, Seekonk town, Somerset town, Swansea town, and Westport town in Massachusetts; Barrington town, Bristol town, Burrillville town, Central Falls city, Charlestown town, Coventry town, Cranston city, Cumberland town, East Greenwich town, East Providence city, Exeter town, Foster town, Glocester town, Hopkinton town, Jamestown town, Johnston town, Lincoln town, Little Compton town, Middletown town, Narragansett town, Newport city, North Kingstown town, North Providence town, North Smithfield town, Pawtucket city, Portsmouth town, Providence city, Richmond town, Scituate town, Smithfield town, South Kingstown town, Tiverton town, Warren town, Warwick city, West Greenwich town, West Warwick town, and Woonsocket city in Rhode Island.

**Springfield, Mass.-Conn. NECTA** includes Agawam city, Ashfield town, Belchertown town, Blandford town, Brimfield town, Chester town, Chesterfield town, Chicopee city, Cummington town, Deerfield town, East Longmeadow town, Easthampton town, Goshen town, Granby town, Granville town, Hadley town, Hampden town, Hatfield town, Holyoke city, Huntington town, Longmeadow town, Ludlow town, Middlefield town, Monson town, Montgomery town, Northampton city, Palmer town, Plainfield town, Russell town, South Hadley town, Southampton town, Southwick town, Springfield city, Tolland town, Wales town,

Ware town, West Springfield town, Westfield city, Westhampton town, Whately town, Wilbraham town, Williamsburg town, and Worthington town in Massachusetts; East Windsor town, Enfield town, Somers town, Suffield town, and Windsor Locks town in Connecticut.

**Worcester, Mass.-Conn. NECTA** includes Auburn town, Barre town, Boylston town, Brookfield town, Charlton town, Clinton town, Douglas town, Dudley town, East Brookfield town, Grafton town, Holden town, Holland town, Hubbardston town, Lancaster town, Leicester town, Millbury town, New Braintree town, North Brookfield town, Northborough town, Northbridge town, Oakham town, Oxford town, Paxton town, Princeton town, Rutland town, Shrewsbury town, Southbridge town, Spencer town, Sterling town, Sturbridge town, Sutton town, Uxbridge town, Webster town, West Boylston town, West Brookfield town, Westborough town, and Worcester city in Massachusetts; Putnam town, Thompson town, and Woodstock town in Connecticut.

### **Additional information**

OES data are available on our regional web page at [www.bls.gov/regions/new-england](http://www.bls.gov/regions/new-england). Answers to frequently asked questions about the OES data are available at [www.bls.gov/oes/oes\\_ques.htm](http://www.bls.gov/oes/oes_ques.htm). Detailed technical information about the OES survey is available in our Survey Methods and Reliability Statement on the BLS website at [www.bls.gov/oes/2014/may/methods\\_statement.pdf](http://www.bls.gov/oes/2014/may/methods_statement.pdf).

Information in this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200; Federal Relay Service: 800-877-8339.