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Occupational Employment and Wages in Madison — May 2019

Workers in the Madison, WI Metropolitan Statistical Area had an average (mean) hourly wage of \$26.11 in May 2019, compared to the nationwide average of \$25.72, the U.S. Bureau of Labor Statistics reported today. Assistant Commissioner for Regional Operations Charlene Peiffer noted that, after testing for statistical significance, wages in the local area were higher than their respective national averages in 2 of the 22 major occupational groups: construction and extraction, and healthcare support. Nine groups had significantly lower wages than their respective national averages, including legal; life, physical, and social science; and arts, design, entertainment, sports, and media.

When compared to the nationwide distribution, Madison area employment was more highly concentrated in 6 of the 22 occupational groups, including computer and mathematical; business and financial operations; and life, physical, and social science. Conversely, nine groups had employment shares significantly below their national representation, including transportation and material moving, food preparation and serving related, and sales and related. (See [table A](#) and [box note](#) at end of release.)

Table A. Occupational employment and wages by major occupational group, United States and the Madison, WI Metropolitan Statistical Area, and measures of statistical significance, May 2019

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Madison	United States	Madison	Percent difference ⁽¹⁾
Total, all occupations	100.0	100.0	\$25.72	\$26.11	2
Management	5.5	4.8*	58.88	56.60*	-4
Business and financial operations	5.6	7.7*	37.56	34.08*	-9
Computer and mathematical	3.1	6.0*	45.08	41.03*	-9
Architecture and engineering	1.8	2.1*	42.69	38.86*	-9
Life, physical, and social science	0.9	2.1*	37.28	32.13*	-14
Community and social service	1.5	1.4	24.27	22.92*	-6
Legal	0.8	0.7*	52.71	45.81*	-13
Educational instruction and library	6.1	6.7*	27.75	27.23	-2
Arts, design, entertainment, sports, and media	1.4	1.6*	29.79	25.25*	-15
Healthcare practitioners and technical	5.9	6.2	40.21	38.97	-3
Healthcare support	4.4	3.7*	14.91	15.86*	6
Protective service	2.4	1.5*	23.98	23.07	-4
Food preparation and serving related	9.2	7.9*	12.82	11.96*	-7
Building and grounds cleaning and maintenance	3.0	2.9	15.03	15.55	3
Personal care and service	2.2	1.7*	15.03	15.44	3
Sales and related	9.8	8.8*	20.70	21.42	3
Office and administrative support	13.3	13.7	19.73	19.81	0
Farming, fishing, and forestry	0.3	0.4	15.07	15.60	4
Construction and extraction	4.2	4.1	25.28	26.40*	4
Installation, maintenance, and repair	3.9	3.2*	24.10	24.41	1

Note: See footnotes at end of table.

Table A. Occupational employment and wages by major occupational group, United States and the Madison, WI Metropolitan Statistical Area, and measures of statistical significance, May 2019 - Continued

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Madison	United States	Madison	Percent difference ⁽¹⁾
Production	6.2	6.4	19.30	19.55	1
Transportation and material moving	8.5	6.3*	18.23	17.89	-2

Footnotes:

(1) A positive percent difference measures how much the mean wage in the Madison, WI Metropolitan Statistical Area is above the national mean wage, while a negative difference reflects a lower wage.

* The mean hourly wage or percent share of employment is significantly different from the national average of all areas at the 90-percent confidence level.

One occupational group—computer and mathematical—was chosen to illustrate the diversity of data available for any of the 22 major occupational categories. Madison had 23,850 jobs in computer and mathematical, accounting for 6.0 percent of local area employment, significantly higher than the 3.1-percent share nationally. The average hourly wage for this occupational group locally was \$41.03, significantly below the national wage of \$45.08.

Some of the larger detailed occupations within the computer and mathematical group included software developers and software quality assurance analysts and testers (8,900), computer systems analysts (3,840), and computer user support specialists (2,330). Among the higher-paying jobs in this group were actuaries and computer and information research scientists, with mean hourly wages of \$53.01 and \$48.94, respectively. At the lower end of the wage scale were computer user support specialists (\$27.73) and web developers and digital interface designers (\$31.87). (Detailed data for the computer and mathematical occupations are presented in [table 1](#); for a complete listing of detailed occupations available go to www.bls.gov/oes/current/oes_31540.htm.)

Location quotients 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. (See [table 1](#).) 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. In the Madison area, above-average concentrations of employment were found in many of the occupations within the computer and mathematical group. For instance, web developers and digital interface designers were employed at 4.8 times the national rate in Madison, and computer systems analysts, at 2.4 times the U.S. average. Computer user support specialists had a location quotient of 1.3 in Madison, indicating that this particular occupation's local and national employment shares were similar.

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 Wisconsin Department of Workforce Development.

Changes to the Occupational Employment Statistics (OES) Data

With the May 2019 estimates, the OES program has begun implementing the 2018 Standard Occupational Classification (SOC) system. Each set of OES estimates is calculated from six panels of survey data collected over three years. Because the May 2019 estimates are based on a combination of survey data collected using the 2010 SOC and survey data collected using the 2018 SOC, these estimates use a hybrid of the two classification systems that contains some combinations of occupations that are not found in either the 2010 or 2018 SOC. These combinations may include occupations from more than one 2018 SOC minor group or broad occupation. Therefore, OES will not publish data for some 2018 SOC minor groups and broad occupations in the May 2019 estimates. The May 2021 estimates, to be published in Spring 2022, will be the first OES estimates based entirely on survey data collected using the 2018 SOC.

In addition, the OES program has replaced some 2018 SOC detailed occupations with SOC broad occupations or OES-specific aggregations. These include home health aides and personal care aides, for which OES will publish only the 2018 SOC broad occupation 31-1120 Home Health and Personal Care Aides.

For more information on the occupational classification system used in the May 2019 OES estimates, please see www.bls.gov/oes/soc_2018.htm and www.bls.gov/oes/oes_ques.htm#qf10.

The May 2019 OES estimates use the metropolitan area definitions delineated in Office of Management and Budget (OMB) Bulletin 17-01, which add a new Metropolitan Statistical Area (MSA) for Twin Falls, Idaho. For more information on the area definitions used in the May 2019 estimates, please see www.bls.gov/oes/current/msa_def.htm.

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Technical Note

The Occupational Employment Statistics (OES) survey is a semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. The OES data available from BLS include cross-industry occupational employment and wage estimates for the nation; over 580 areas, including states and the District of Columbia, metropolitan statistical areas (MSAs), nonmetropolitan areas, and territories; national industry-specific estimates at the NAICS sector, 3-digit, most 4-digit, and selected 5- and 6-digit industry levels, and national estimates by ownership across all industries and for schools and hospitals. OES data are available at www.bls.gov/oes/tables.htm.

The OES survey is a cooperative effort between BLS and the State Workforce Agencies (SWAs). BLS funds the survey and provides the procedures and technical support, while the State Workforce Agencies collect most of the data. OES estimates are constructed from a sample of about 1.1 million establishments. Each year, two semiannual panels of approximately 180,000 to 200,000 sampled establishments are contacted, one panel in May and the other in November. Responses are obtained by mail, Internet or other electronic means, email, telephone, or personal visit. The May 2019 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2019, November 2018, May 2018, November 2017, May 2017, and November 2016. The unweighted sample employment of 83 million across all six semiannual panels represents approximately 57 percent of total national employment. The overall national response rate for the six panels, based on the 50 states and the District of Columbia, is 71 percent based on establishments and 68

percent based on weighted sampled employment. The sample in the Madison, WI Metropolitan Statistical Area included 2,897 establishments with a response rate of 73 percent. For more information about OES concepts and methodology, go to www.bls.gov/oes/current/oes_tec.htm.

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.

The May 2019 OES estimates are the first set of OES estimates to be based in part on survey data collected using the 2018 SOC. These estimates use a hybrid of the 2010 and 2018 SOC systems. More information on the hybrid classification system is available at www.bls.gov/oes/soc_2018.htm.

The May 2019 OES estimates are based on the 2017 North American Industry Classification System (NAICS). More information about the 2017 NAICS is available at 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.

The **Madison, WI Metropolitan Statistical Area** includes Columbia, Dane, Green, and Iowa Counties.

For more information

Answers to frequently asked questions about the OES data are available at www.bls.gov/oes/oes_ques.htm. Detailed information about the OES program is available at www.bls.gov/oes/oes_doc.htm.

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.

Table 1. Employment and wage data for computer and mathematical occupations, Madison, WI Metropolitan Statistical Area, May 2019

Occupation ⁽¹⁾	Employment		Mean wages	
	Level ⁽²⁾	Location quotient ⁽³⁾	Hourly	Annual ⁽⁴⁾
Computer and mathematical occupations	23,850	2.0	\$41.03	\$85,350
Computer systems analysts	3,840	2.4	45.12	93,840
Information security analysts	490	1.5	44.68	92,940
Computer and information research scientists	(5)	(5)	48.94	101,800
Computer network support specialists	820	1.6	35.82	74,500
Computer user support specialists	2,330	1.3	27.73	57,670
Computer network architects	370	0.9	47.97	99,770
Network and computer systems administrators	1,310	1.4	37.93	78,900
Database administrators and architects	580	1.7	40.24	83,690
Computer programmers	920	1.7	40.03	83,250
Software developers and software quality assurance analysts and testers	8,900	2.4	45.49	94,620
Web developers and digital interface designers	1,920	4.8	31.87	66,290
Computer occupations, all other	950	0.9	36.55	76,030
Actuaries	250	4.1	53.01	110,260
Operations research analysts	380	1.4	32.20	66,980
Statisticians	170	1.6	38.37	79,820
Data scientists and mathematical science occupations, all other	130	1.5	39.84	82,870

Footnotes:

(1) For a complete listing of all detailed occupations in the Madison, WI Metropolitan Statistical Area, see www.bls.gov/oes/current/oes_31540.htm

(2) Estimates for detailed occupations may not sum to the totals due to rounding, and because the totals may include occupations that are not shown separately. Estimates do not include self-employed workers.

(3) The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average.

(4) Annual wages have been calculated by multiplying the hourly mean wage by a "year-round, full-time" hours figure of 2,080 hours; for those occupations where there is not an hourly mean wage published, the annual wage has been directly calculated from the reported survey data.

(5) Estimate not released.