



2021
EDITION

Labor
Market
Industry Profile

Florida
Life Sciences
Industry

Florida Life Sciences Industry Cluster

Exploring Florida's Targeted Industries

Florida's geographic location ideally positions the state as a hub of commerce to all parts of the world. Florida's competitive costs, comprehensive infrastructure and a large, diverse talent pool amongst other things have supported the expansion of a dynamic economy throughout the following six key areas: aviation & aerospace, life sciences, manufacturing, information technology, financial & professional services and logistics & distribution—which are the subject of this series of reports titled *Industry Profiles*.

Industry Profiles detail the benefits of these targeted industries on Florida's employment, wage-earning levels and how each industry is forecast to perform moving forward. In an ever increasingly competitive global market, Florida continues to position itself for future growth in key areas as evidenced in the following industry profiles.

Overview

Florida's Life Sciences industry cluster is comprised of the Biosciences industry cluster (Part I) and the Health care industry cluster (Part II). The Life Sciences industry cluster is composed of the following subsectors, industry groups, and industries:

Biosciences (Part I)

- Medicinal and Botanical Manufacturing (NAICS industry 325411),
- Pharmaceutical Preparation Manufacturing (NAICS industry 325412),
- In-Vitro Diagnostic Substance Manufacturing (NAICS industry 325413),
- Other Biological Product Manufacturing (NAICS industry 325414),
- Electromedical Apparatus Manufacturing (NAICS industry 334510),
- Analytical Laboratory Instruments Manufacturing (NAICS industry 334516),
- Irradiation Apparatus Manufacturing (NAICS industry 334517),
- Surgical and Medical Instrument Manufacturing (NAICS industry 339112),
- Surgical Appliance and Supplies Manufacturing (NAICS industry 339113),
- Ophthalmic Goods Manufacturing (NAICS industry 339115),
- Research and Development in Nanotechnology (NAICS industry 541713), and
- Research and Development in Biotechnology (NAICS industry 541714).

Health Care (Part I)

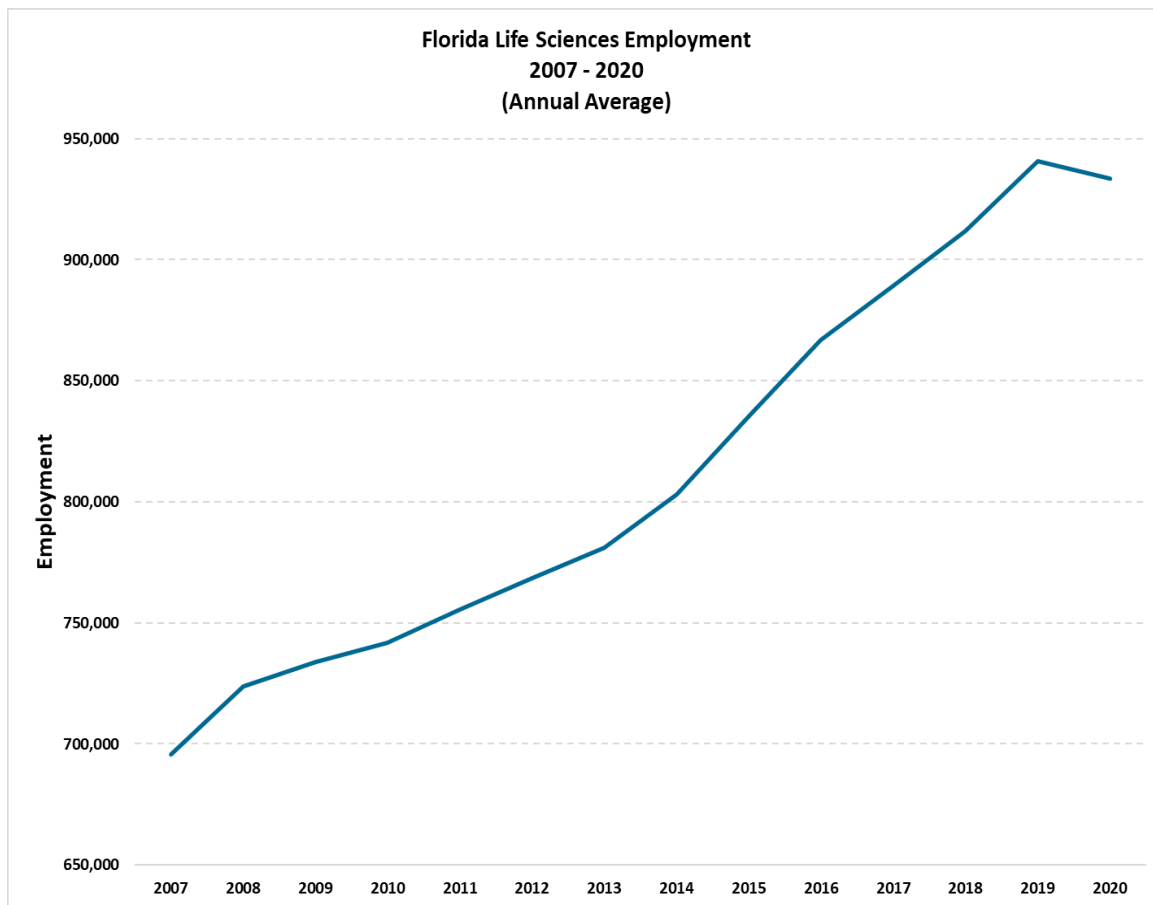
- Ambulatory Health Care Services (NAICS subsector 621),
- Offices of Physicians (NAICS industry group 6211),
- Offices of Dentists (NAICS industry group 6212),
- Offices of Other Health Practitioners (NAICS industry group 6213),
- Outpatient Care Centers (NAICS industry group 6214),
- Medical and Diagnostic Laboratories (NAICS industry group 6215),
- Home Health Care Services (NAICS industry group 6216),
- Other Ambulatory Health Care Services (NAICS industry group 6219),
- Hospitals (NAICS subsector 622),
- General Medical and Surgical Hospitals (NAICS industry group 6221),

- Psychiatric & Substance Abuse Hospitals (NAICS industry group 6222), and
- Other Hospitals (NAICS industry group 6223).

Some of the largest subsectors, industry groups, and industries within the Life Sciences industry cluster include: Pharmaceutical Preparation Manufacturing, Electromedical and Electrotherapeutic Apparatus Manufacturing, Surgical and Medical Instrument Manufacturing, Surgical Appliance and Supplies Manufacturing, Ophthalmic Goods Manufacturing, Ambulatory Health Care Services (Physicians, Dentists, Outpatient Care Centers, and Home Health Care Centers), and Hospitals.

Employment Trends in the Life Sciences Industry Cluster

The Life Sciences industry cluster had 55,081 establishments in 2020, with employment of 933,639. Employment in 2020 was down 7,157 jobs (-0.8 percent) from 2019. Although, employment has been on an upward trend since 2007, gaining 238,165 jobs (+34.2 percent) over this period.



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

Florida Biosciences Industry, Part I

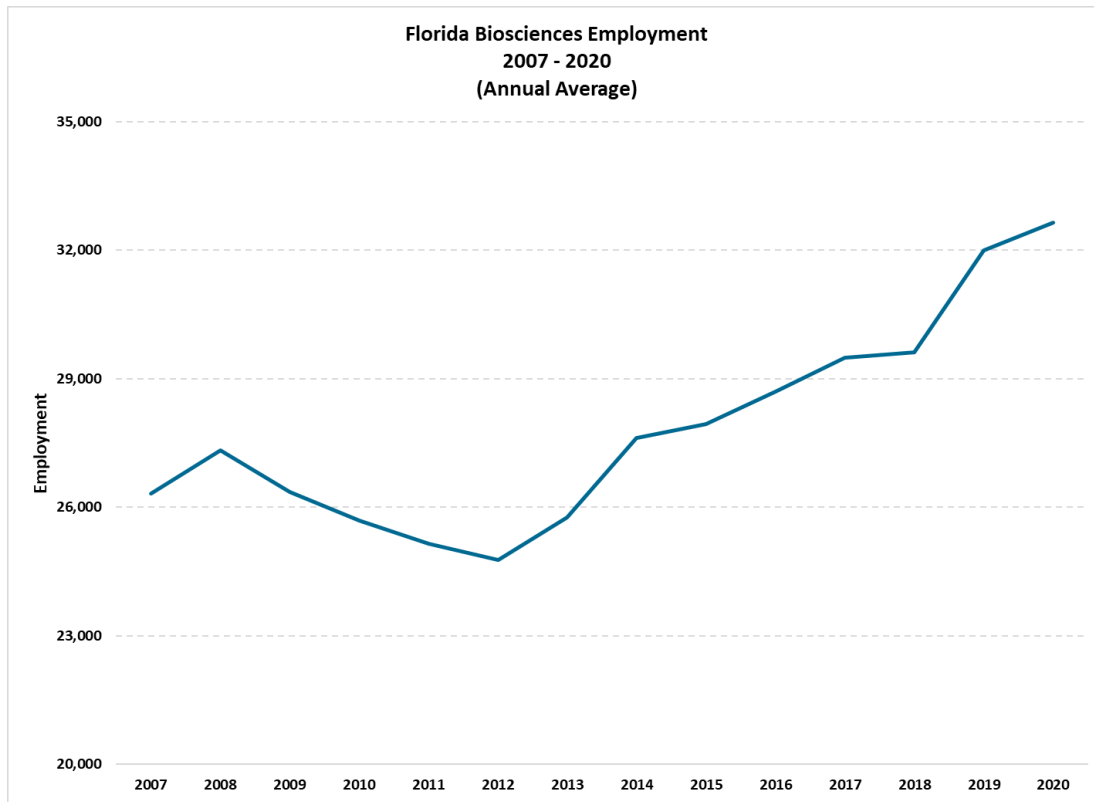
Florida continues to build a world-class bioscience industry following the job losses that occurred during 2008 to 2012. Florida is presently home to the nation's second largest pharmaceutical and medicine manufacturing industry, and medical device manufacturing industry. The Biosciences industry is built on a foundation of strong research universities and leading institutes.

The Biosciences industry includes the following industries:

- Medicinal and Botanical Manufacturing (NAICS industry 325411),
- Pharmaceutical Preparation Manufacturing (NAICS industry 325412),
- In-Vitro Diagnostic Substance Manufacturing (NAICS industry 325413),
- Other Biological Product Manufacturing (NAICS industry 325414),
- Electromedical Apparatus Manufacturing (NAICS industry 334510),
- Analytical Laboratory Instruments Manufacturing (NAICS industry 334516),
- Irradiation Apparatus Manufacturing (NAICS industry 334517),
- Surgical and Medical Instrument Manufacturing (NAICS industry 339112),
- Surgical Appliance and Supplies Manufacturing (NAICS industry 339113),
- Ophthalmic Goods Manufacturing (NAICS industry 339115),
- Research and Development in Nanotechnology (NAICS industry 541713), and
- Research and Development in Biotechnology (NAICS industry 541714).

Employment Trends in the Biosciences Industry

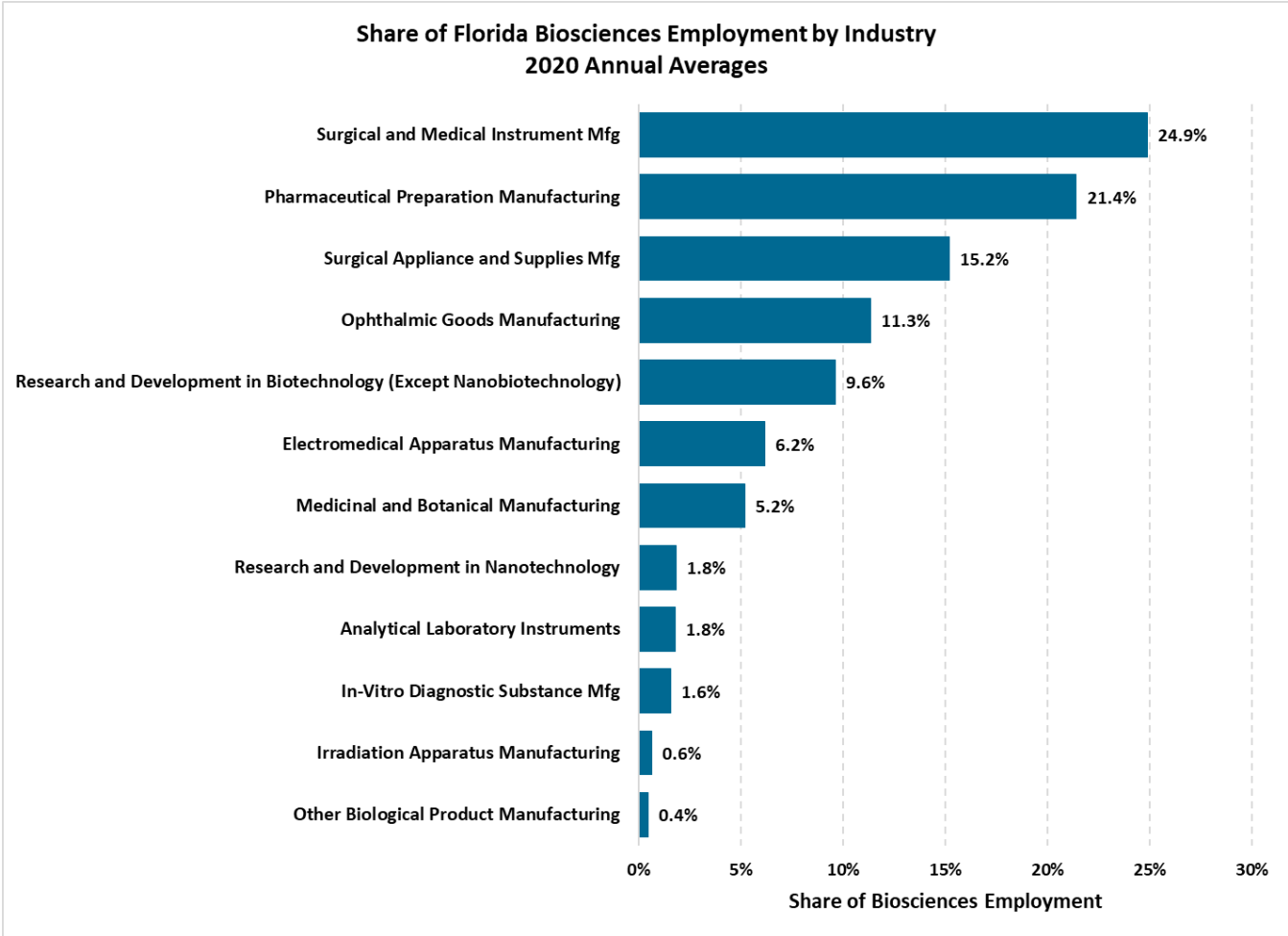
The Biosciences industry had 1,829 establishments in 2020, with employment of 32,643. Employment was up 643 jobs (+2.0 percent) from 2019. With its ups and downs, employment has gained 6,323 jobs (+24.02 percent) since 2007.



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

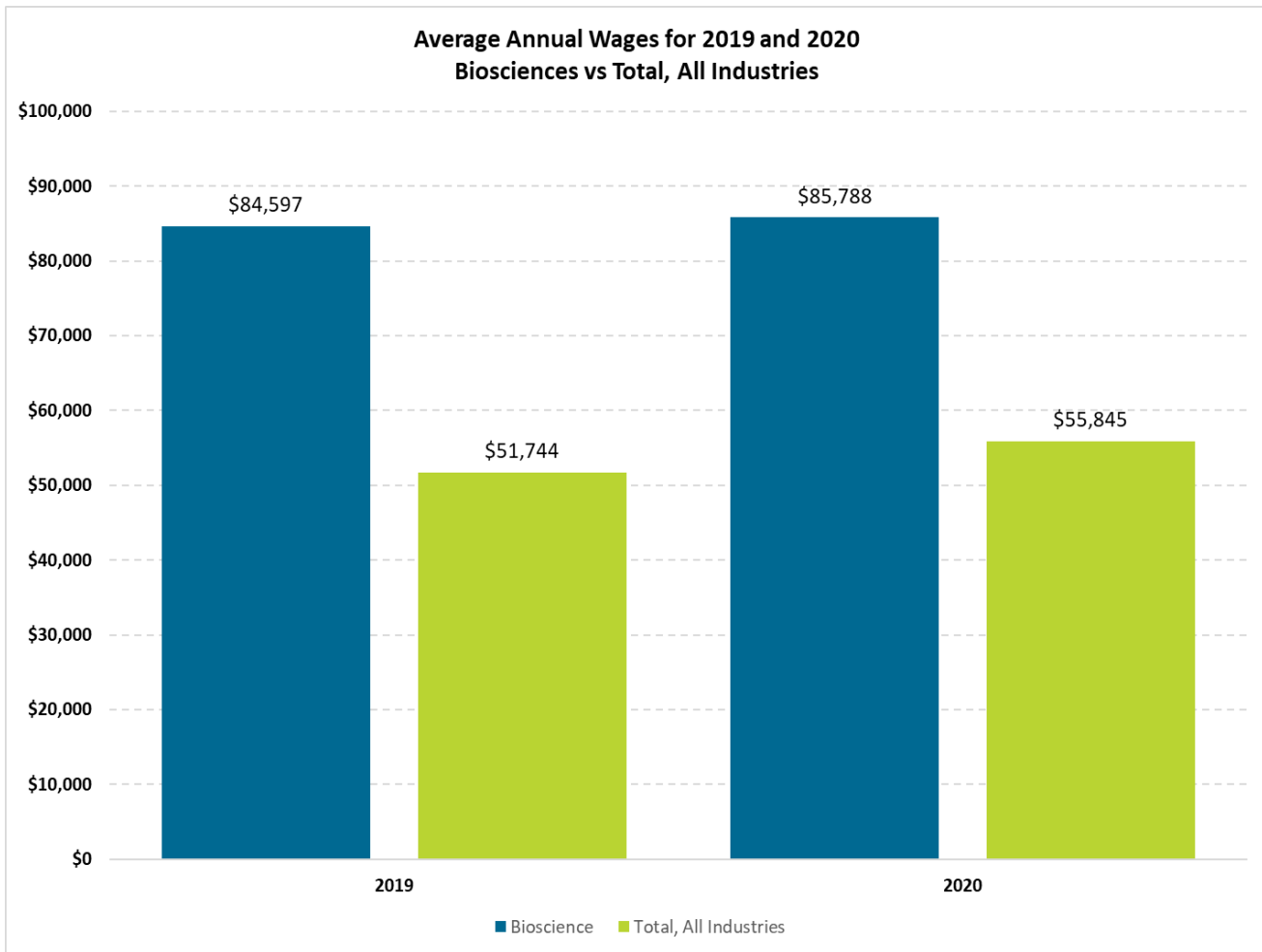
Florida bioscience employment was on a downward trend from 2008 to 2012, losing 2,576 jobs (-9.4 percent) from its peak (27,336 jobs) in 2008. From this low, biosciences employment has been on an upward trend from 2012 to 2020, rising to 32,643 jobs (+29.3 percent).

The largest industries within the Biosciences industry in 2020 were Surgical and Medical Instrument Manufacturing (8,116 jobs), Pharmaceutical Preparation Manufacturing (6,986 jobs), and Surgical Appliance and Supplies manufacturing (4,950 jobs). These three industries made up 61.4 percent of employment in the Biosciences industry.



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

Within the Biosciences industry, the Pharmaceutical Preparation Manufacturing industry gained the most jobs over the year (+620 jobs, +9.7 percent), while Ophthalmic Goods Manufacturing lost the most jobs over the year (-272 jobs, -6.8 percent).



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

The 2020 average annual wage in the Biosciences industry increased less than the average wage for all industries over the year. The 2020 average annual wage in the Biosciences industry was \$85,788, an increase of \$1,191 (+1.4 percent) from 2019. The average annual wage for all industries grew by \$4,101 (+7.9 percent) over the year.

The 2020 average annual wage for the Biosciences industry exceeded the average annual wage for all industries (\$55,845) by \$29,943 (+53.6 percent). This gap has narrowed from 2019 when the average annual wage exceeded the wage for all industries by \$32,853 (+63.5 percent).

Research and Development in Biotechnology (except Nanobiotechnology) had an average annual wage of \$139,763 in 2020—an increase of 21.1% (+\$24,314) from 2019. The average annual wage of \$139,763 makes it the highest in the Biosciences industry and 150.3 percent higher than the average annual wage for all industries. Medicinal and Botanical Manufacturing had the lowest average annual wage in 2020 (\$53,050). Eleven of 12 biosciences industries had 2020 average annual wages greater than the average annual wage for all industries, while six of the industries had wages higher than \$90,000. Compared to the average annual wage for all industries in 2020 (\$55,845), most biosciences industries had relatively high wages.

All Education and Training Levels

Top Occupations in the Biosciences Industry Cluster For All Training Levels*

Occupation Title	Employment		2020 - 2028 Change		% of Industry Total	2020 Median Hourly Wage	Training Requirement
	2020	2028	Total	Percent			
Total, All Biotechnology Occupations	69,358	72,331	2,973	4.29			
Dental Laboratory Technicians	2,647	2,791	144	5.44	3.82	18.24	High school diploma or GED
Industrial Engineers	2,252	2,444	192	8.53	3.25	39.21	Bachelor's Degree
Medical Scientists, Except Epidemiologists	2,017	2,307	290	14.38	2.91	36.61	Doctoral or Professional Degree
First-Line Supervisors/Managers of Production and	1,554	1,601	47	3.02	2.24	27.48	High school diploma or GED
Ophthalmic Laboratory Technicians	1,283	1,332	49	3.82	1.85	15.45	High school diploma or GED
Software Developers, Systems Software	1,158	1,186	28	2.42	1.67	46.26	Bachelor's Degree
Sales Representatives, Wholesale and Manufacturing	1,053	1,069	16	1.52	1.52	34.59	Bachelor's Degree
Biological Technicians	1,006	1,151	145	14.41	1.45	19.64	Bachelor's Degree
Mechanical Engineers	997	1,007	10	1.00	1.44	40.76	Bachelor's Degree
Mixing and Blending Machine Setters, Operators,	995	1,188	193	19.40	1.43	16.54	High school diploma or GED
Software Developers, Applications	994	1,025	31	3.12	1.43	46.26	Bachelor's Degree
Business Operations Specialists, All Other	902	998	96	10.64	1.30	31.58	Bachelor's Degree
Electrical and Electronic Engineering Technicians	833	817	-16	-1.92	1.20	29.39	Associate Degree
Sales Representatives, Wholesale and Manufacturing	802	823	21	2.62	1.16	34.59	High school diploma or GED
Machinists	778	766	-12	-1.54	1.12	20.18	High school diploma or GED

* The Top 15 table reflects the occupations synonymous with the particular industry and best represents the required set of skills. Though still counted in the total employment of the Biosciences Industry, the occupations not included for 2020 were: Packaging and Filling Machine Operator and Tender (2,997 jobs); Inspectors, Testers, Sorters, Samplers, and Weighers (1,778 jobs); General and Operations Managers (1,829 jobs); Installation, Maintenance, and Repair Occupations (1,419 jobs); Office Clerks, General (1,359 jobs); and Customer Service Representatives (1,323 jobs).

- The top 15 occupations (by employment) in the Biosciences industry made up 27.78 percent of total employment within the industry.
- The largest occupation in 2020 was Dental Laboratory Technicians, which has a median hourly wage of \$18.24.
- Among the top 15 occupations, median hourly wages range from a high of \$46.26 for Software Developers to a low of \$15.45 for Ophthalmic Laboratory Technicians. Ten of the 15 largest occupations have a median wage greater than \$25.00 per hour.
- Thirteen of the top 15 occupations are projected to gain employment.
- Medical Scientists, Except Epidemiologists, is projected to gain the most jobs (+290 jobs) and Mixing and Blending Machine Setters, Operators is expected to grow the fastest (+19.40 percent) of the top 15 occupations from 2020 to 2028. Electrical and Electronic Engineering Technicians (-16 jobs, -1.92 percent) and Machinists (-12 jobs, -1.54 percent) are the only occupations projected to lose jobs.
- Nine of the top 15 occupations require training beyond high school, with eight requiring a bachelor's degree or higher.

Bachelor's Degree or Higher

Top Occupations in the Biosciences Industry Cluster That Require a Bachelor's Degree or Higher**							
Occupation Title	Employment		2020 - 2028 Change		% of	2020	Training Requirement
	2020	2028	Total	Percent	Industry Total	Median Hourly Wage	
Total, All Biotechnology Occupations	29,564	31,869	2,305	7.80			
Industrial Engineers	2,252	2,444	192	8.53	7.62	39.21	Bachelor's Degree
Medical Scientists, Except Epidemiologists	2,017	2,307	290	14.38	6.82	36.61	Doctoral or Professional Degree
Software Developers, Systems Software	1,158	1,186	28	2.42	3.92	46.26	Bachelor's Degree
Sales Representatives, Wholesale and Manufacturing	1,053	1,069	16	1.52	3.56	34.59	Bachelor's Degree
Biological Technicians	1,006	1,151	145	14.41	3.40	19.64	Bachelor's Degree
Mechanical Engineers	997	1,007	10	1.00	3.37	40.76	Bachelor's Degree
Software Developers, Applications	994	1,025	31	3.12	3.36	46.26	Bachelor's Degree
Electrical Engineers	760	742	-18	-2.37	2.57	46.03	Bachelor's Degree
Industrial Production Managers	753	776	23	3.05	2.55	49.19	Bachelor's Degree
Engineering Managers	742	743	1	0.13	2.51	66.13	Bachelor's Degree
Chemists	684	840	156	22.81	2.31	28.50	Bachelor's Degree
Management Analysts	586	648	62	10.58	1.98	34.39	Bachelor's Degree
Market Research Analysts and Marketing Specialists	579	681	102	17.62	1.96	26.82	Bachelor's Degree
Computer and Information Systems Managers	522	537	15	2.87	1.77	65.61	Bachelor's Degree
Engineers, All Other	495	514	19	3.84	1.67	46.42	Bachelor's Degree

** The Top 15 table reflects the occupations synonymous with the particular industry and best represents the required set of skills. Though still counted in the total employment of the Biosciences Industry, the occupations not included for 2020 were: General and Operations Managers (1,829 jobs); Business Operations Specialists, All Other (902 jobs); Accountants and Auditors (792 jobs); and Managers, All Other (533 jobs).

- Approximately 21.05 percent of employment in the Biosciences industry cluster is concentrated in the top 15 occupations that require at least a bachelor's degree.
- Median hourly wages for occupations that require at least a bachelor's degree range from a high of \$66.13 for Engineering Managers to a low of \$19.64 for Biological Technicians.
- Twelve of the top 15 occupations that require at least a bachelor's degree have a median wage greater than \$30.00 per hour.
- All of the top 15 occupations that require at least a bachelor's degree are projected to gain employment through 2028.
- Medical Scientists, Except Epidemiologists, is projected to gain the most jobs (+290 jobs) of the top 15 occupations that require at least a bachelor's degree from 2020 to 2028, while Chemists is projected to grow the fastest (+22.81 percent).
- Employment in the Biosciences industry is concentrated in the southeast, central, and northeast areas of the state. The largest counties by employment are Miami-Dade, Pinellas, Broward, Duval, Hillsborough, Palm Beach, Orange, Alachua, Collier, and Volusia.

Florida Healthcare Industry, Part II

The Healthcare industry has two major subsectors: Ambulatory Health Care Services and Hospitals. Industries in the Ambulatory Health Care services subsector provide health care services directly or indirectly to ambulatory patients and do not usually provide inpatient services. Industries in the Hospitals subsector provide medical, diagnostic, and treatment services that include physician, nursing and other health services to inpatients and the specialized accommodation services required by inpatients.

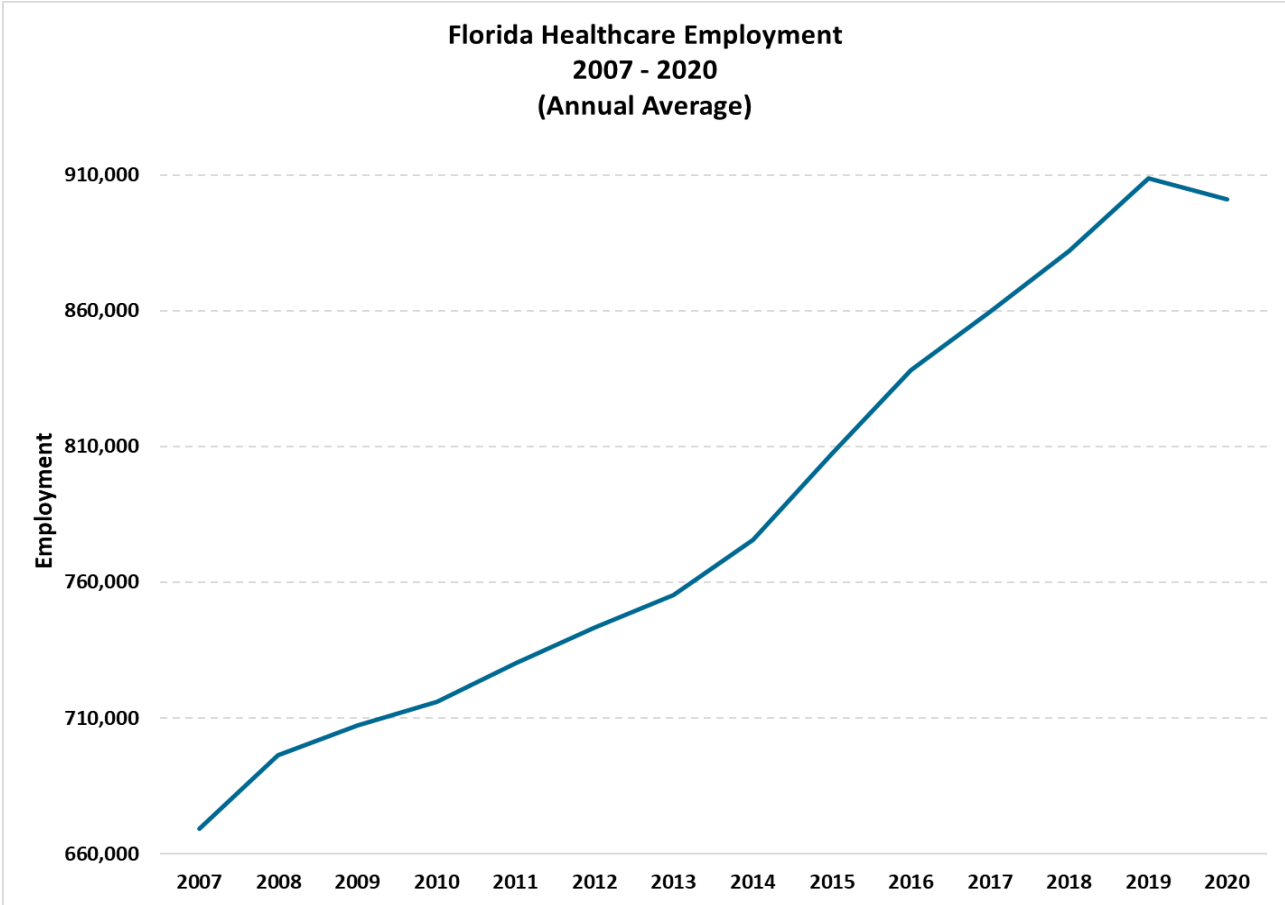
The Healthcare industry includes the following industries:

- Ambulatory Health Care Services (NAICS subsector 621),
- Offices of Physicians (NAICS industry group 6211),
- Offices of Dentists (NAICS industry group 6212),
- Offices of Other Health Practitioners (NAICS industry group 6213),
- Outpatient Care Centers (NAICS industry group 6214),
- Medical and Diagnostic Laboratories (NAICS industry group 6215),
- Home Health Care Services (NAICS industry group 6216),
- Other Ambulatory Health Care Services (NAICS industry group 6219),
- Hospitals (NAICS subsector 622),
- General Medical and Surgical Hospitals (NAICS industry group 6221),
- Psychiatric & Substance Abuse Hospitals (NAICS industry group 6222), and
- Other Hospitals (NAICS industry group 6223).

Employment Trends in the Healthcare Industry

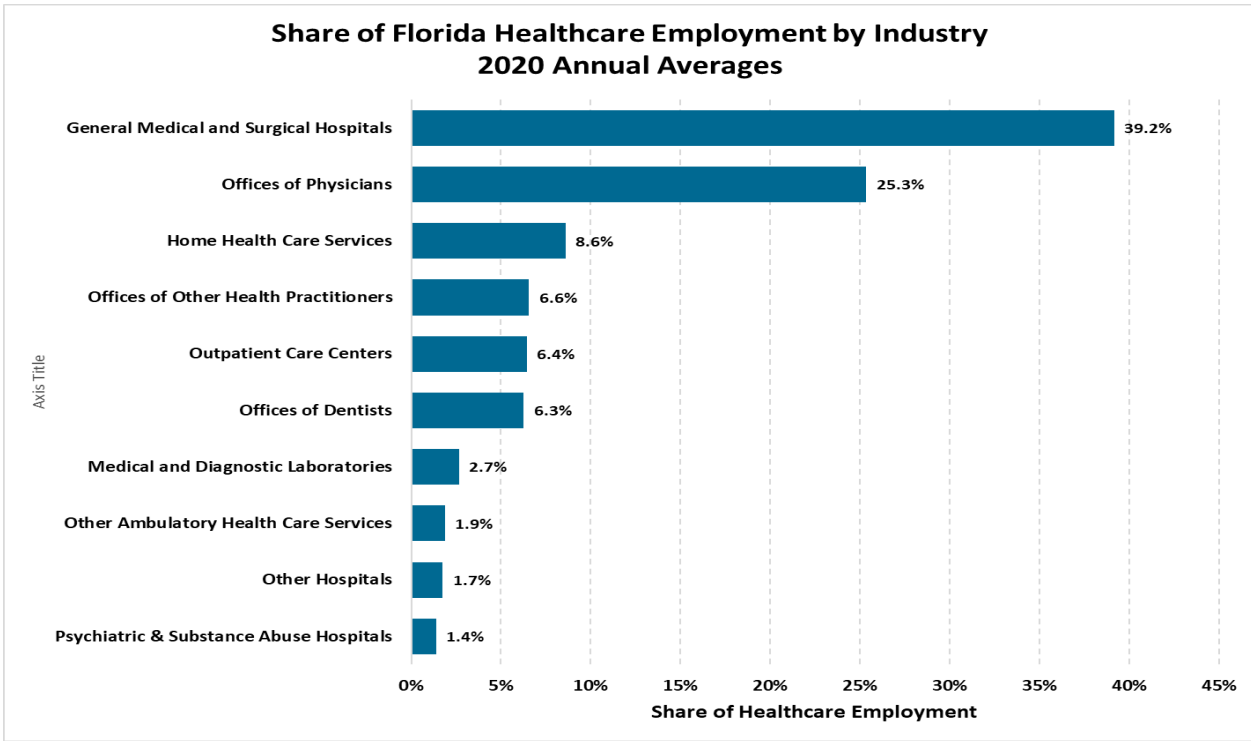
The Healthcare industry had 53,252 establishments in 2020, with employment of 900,996. Employment was down 7,800 jobs (-0.9 percent) from 2019.

Florida health care employment experienced a slight decrease in growth during 2020, losing 7,800 jobs (-0.9 percent) over the year. From 2007 to 2020, health care employment has increased by 231,842 jobs (+34.6 percent).



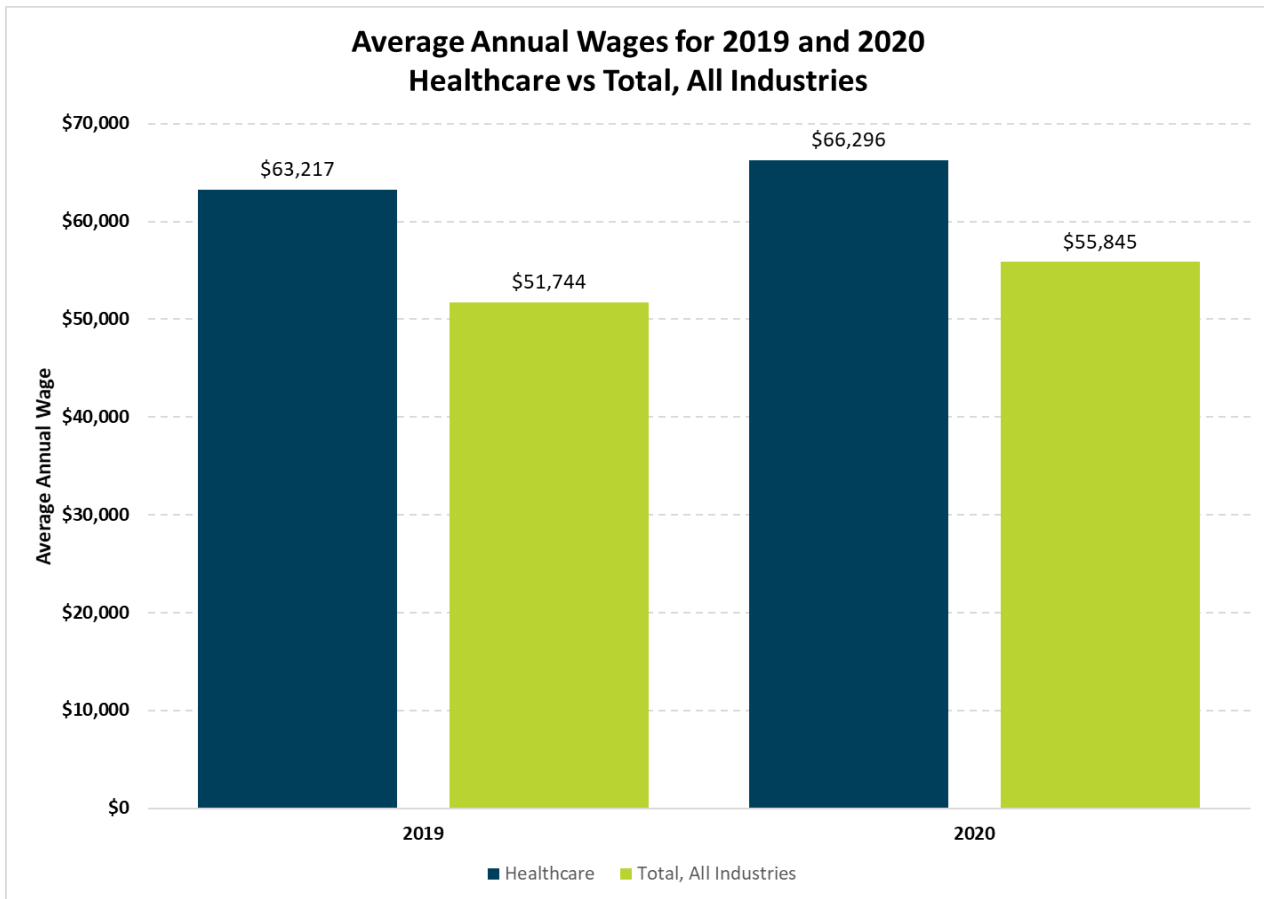
Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and Economic Research, Quarterly Census of Employment and Wages program (QCEW).

The largest industry groups within health care in 2020 were General Medical and Surgical Hospitals (352,840 jobs) and Offices of Physicians (228,240 jobs). These two industry groups made up 64.5 percent of health care employment.



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

Within the Healthcare industry, Offices of Other Health Practitioners gained the most jobs over the year in 2020 (+546 jobs, +0.9 percent). Three of ten industry groups in the Healthcare industry gained jobs over the year, while Home Health Care Services lost the most jobs over the year (-2,330 jobs, -2.9 percent).



Source: Florida Department of Economic Opportunity, Bureau of Workforce Statistics and & Economic Research, Quarterly Census of Employment and Wages Program (QCEW).

The 2020 average annual wage for all industries increased more than the average wage for the Healthcare industry cluster. The 2020 average annual wage for health care was \$66,296, an increase of \$3,079 (+4.9 percent) from 2019. The average annual wage for all industries grew by \$4,101 (+7.9 percent) over the year.

The 2020 average annual wage for the Healthcare industry exceeded the average annual wage for all industries (\$55,845) by \$10,451 (+18.7 percent). Offices of Physicians had an average annual wage of \$89,119 in 2020, the highest of all health care industry groups and 59.6 percent higher than the average annual wage for all industries. Psychiatric and Substance Abuse Hospitals had the lowest average annual wage of \$44,271 in 2020, which was 20.7 percent lower than the average annual wage for all industries. Six of the ten Healthcare industry groups had 2020 average annual wages greater than the average annual wage for all industries and four groups had a wage higher than \$60,000.

All Education and Training Levels

Top Occupations in the Healthcare Industry Cluster For All Training Levels*

Occupation Title	Employment		2020 - 2028 Change		% of	2020	Training Requirement
	2020	2028	Total	Percent	Industry Total	Median Hourly Wage	
Total, All Healthcare Occupations	918,093	1,047,945	129,852	14.14			
Registered Nurses	159,157	176,122	16,965	10.66	17.34	32.46	Bachelor's Degree
Medical Assistants	56,726	68,868	12,142	21.40	6.18	16.39	Postsecondary non-degree award
Nursing Assistants	37,531	42,050	4,519	12.04	4.09	13.49	Postsecondary non-degree award
Licensed Practical and Licensed Vocational Nurses	27,297	31,236	3,939	14.43	2.97	22.25	Postsecondary non-degree award
Medical Secretaries	25,252	28,526	3,274	12.97	2.75	16.33	High School Diploma or GED
Home Health Aides	21,693	26,131	4,438	20.46	2.36	11.61	High School Diploma or GED
Physicians and Surgeons, All Other	21,163	24,192	3,029	14.31	2.31	NR	Doctoral or Professional Degree
Dental Assistants	19,655	22,080	2,425	12.34	2.14	19.39	Postsecondary non-degree award
Billing and Posting Clerks and Machine Operators	18,560	21,038	2,478	13.35	2.02	17.91	High School Diploma or GED
Radiologic Technologists and Technicians	14,337	16,178	1,841	12.84	1.56	27.61	Associate Degree
Medical and Health Services Managers	14,082	18,369	4,287	30.44	1.53	46.06	Bachelor's Degree
Family and General Practitioners	13,476	15,522	2,046	15.18	1.47	93.05	Doctoral or Professional Degree
Physical Therapists	11,836	13,916	2,080	17.57	1.29	42.21	Doctoral or Professional Degree
Dental Hygienists	11,633	12,980	1,347	11.58	1.27	33.68	Associate Degree
Nurse Practitioners	10,727	16,721	5,994	55.88	1.17	48.53	Master's Degree

* The Top 15 table reflects the occupations synonymous with the particular industry and best represents the required set of skills. Though still counted in the total employment of the Health Care Industry, the occupations not included for 2020 were: Receptionists and Information Clerks (40,469 jobs); Office Clerks, General (21,656 jobs); First-Line Supervisors of Office and Admin. Support Workers (18,024 jobs); Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (17,930 jobs); and Customer Service Representatives (11,649 jobs).

NR - Not Releasable

- The top 15 occupations (by employment) in the Healthcare industry made up 50.44 percent of total employment within the industry.
- The largest occupation in 2020 was Registered Nurses, which has a median hourly wage of \$32.46.
- Among the top 15 occupations (excluding Family and General Practitioners), median hourly wages range from a high of \$48.53 for Nurse Practitioners to a low of \$11.61 for Home Health Aides. Eight of the top 15 occupations have a median wage greater than \$20.00 per hour.
- All of the top 15 occupations are projected to gain double-digit percentage increases through 2028.
- Registered Nurses is projected to gain the most jobs (+16,965 jobs) of the top 15 occupations, while Nurse Practitioners is projected to grow the fastest (+55.88 percent) from 2019 to 2027.
- Twelve of the top 15 Healthcare industry occupations require training beyond high school, with five requiring a bachelor's degree or higher.

Bachelor's Degree or Higher

Top Occupations in the Healthcare Industry Cluster That Require a Bachelor's Degree or Higher**							
Occupation Title	Employment		2020 - 2028 Change		% of	2020	Training Requirement
	2020	2028	Total	Percent	Industry Total	Median Hourly Wage	
Total, All Healthcare Occupations	346,845	400,030	53,185	15.33			
Registered Nurses	159,157	176,122	16,965	10.66	45.89	32.46	Bachelor's Degree
Physicians and Surgeons, All Other	21,163	24,192	3,029	14.31	6.10	NR	Doctoral or Professional Degree
Medical and Health Services Managers	14,082	18,369	4,287	30.44	4.06	46.06	Bachelor's Degree
Family and General Practitioners	13,476	15,522	2,046	15.18	3.89	93.05	Doctoral or Professional Degree
Physical Therapists	11,836	13,916	2,080	17.57	3.41	42.21	Doctoral or Professional Degree
Nurse Practitioners	10,727	16,721	5,994	55.88	3.09	48.53	Master's Degree
Dentists, General	7,139	8,020	881	12.34	2.06	70.91	Doctoral or Professional Degree
Medical and Public Health Social Workers	6,647	7,574	927	13.95	1.92	25.72	Master's Degree
Physician Assistants	6,310	8,525	2,215	35.10	1.82	52.96	Master's Degree
Pharmacists	5,772	6,304	532	9.22	1.66	60.11	Doctoral or Professional Degree
Occupational Therapists	5,135	6,069	934	18.19	1.48	42.42	Master's Degree
Speech-Language Pathologists	3,822	5,123	1,301	34.04	1.10	39.83	Master's Degree
Chiropractors	2,651	2,818	167	6.30	0.76	35.12	Doctoral or Professional Degree
Employment, Recruitment, and Placement Specialists	2,630	2,944	314	11.94	0.76	26.85	Bachelor's Degree
Mental Health and Substance Abuse Social Workers	2,578	2,981	403	15.63	0.74	19.05	Master's Degree

** The Top 15 table reflects the occupations synonymous with the particular industry and best represents the required set of skills. Though still counted in the total employment of the Health Care Industry, the occupations not included for 2020 were: Business Operations Specialists, All Other (7,338 jobs) and General and Operations Managers (3,587 jobs).

NR - Not Releasable

- Approximately 29.75 percent of employment in the Healthcare industry is concentrated in the top 15 occupations that require at least a bachelor's degree.
- Median hourly wages for occupations that require at least a bachelor's degree range from a high of \$93.05 for Family and General Practitioners to a low of \$19.05 for Mental Health and Substance Abuse Social Workers.
- Eleven of the top 14 occupations (excluding Physicians and Surgeons, All Other) have a median wage greater than \$30.00 per hour.
- Thirteen of the top 15 occupations that require at least a bachelor's degree are projected to gain double digit percentage increases through 2028.
- Registered Nurses is projected to gain the most jobs (+16,965 jobs) among the top 15 occupations that require at least a bachelor's degree from 2020 to 2028, while Nurse Practitioners is expected to grow the fastest (+55.88 percent).
- Twelve of the 15 occupations that require at least a bachelor's degree require a master's degree or higher.
- Employment in the Healthcare industry is concentrated in the southeast, central, and northeast areas of the state. The largest counties by employment are Miami-Dade, Broward, Hillsborough, Palm Beach, Orange, Duval, and Pinellas counties.

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