



Special Report: Cannabis Jobs Count

Call it America's hidden job boom.

In 2019, more than 211,000 Americans support their families and communities with legal cannabis jobs.

The government doesn't count them.
But we do. Because they matter.

By Bruce Barcott, Leafly
with Beau Whitney, Whitney Economics
March 2019

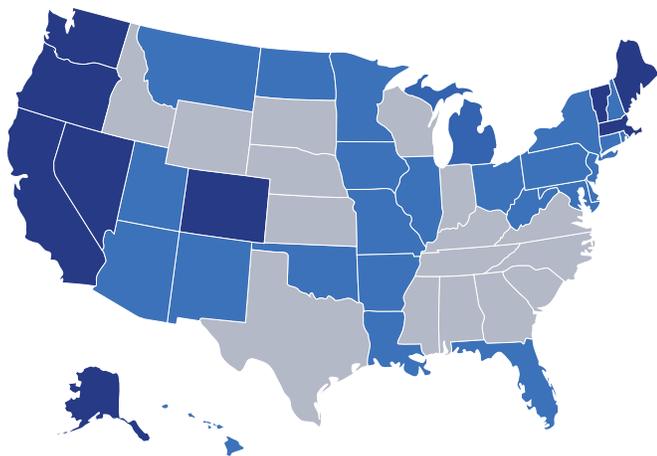
LEGAL CANNABIS

America's Job Creator

Job growth is the single most powerful indicator of America's economic health. When the major media heralds a booming economy, job gains usually lead the news.

"2018 marked the strongest year of manufacturing job growth since 1997," *The Hill* noted recently.¹ "Baby boomers should be hanging it up and kicking back," wrote *USA Today*. "Instead, they're still driving U.S. job growth."²

Job growth swings votes in national elections. Bill Clinton won in 1992 because he focused on bringing workers out of the early-'90s recession. In the words of his campaign advisor James Carville: "It's the economy, stupid."



34

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10

states and Washington, D.C., have legalized the adult use of cannabis.

Anxiety over manufacturing jobs³ lost to overseas factories was widely seen as a factor in the 2016 election of Donald Trump.⁴

Jobs are personal and political. Job loss can deal a blow to personal self-esteem, which can lead to depression and other long-term health struggles.⁵

AT A GLANCE

- 34 states have legalized the use of medical cannabis.
- 10 states and Washington, D.C., have legalized the adult use of cannabis.
- Legal cannabis sales increased 34% nationwide in 2018, to \$10.8 billion.
- There are now more than 211,000 full-time jobs in the legal American cannabis industry.
- The U.S. added 64,389 full-time legal cannabis jobs in 2018. That's enough people to fill Chicago's Soldier Field, with 3,000 more tailgating outside.
- California alone is predicted to add more than 10,000 cannabis jobs in 2019.
- Florida is expected to add 9,500 cannabis jobs in 2019.
- When indirect and induced jobs are added, the total number of full-time American jobs that depend on legal cannabis rises to 296,000.
- There are now more legal cannabis industry workers than dental hygienists in the United States.

1 Chad Moutray, "Manufacturers are gung-ho for 2019—for good reason," *The Hill*, Jan. 8, 2019.

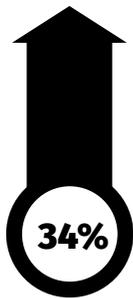
2 Paul Davidson, "Older workers are driving job growth as boomers remain in workforce longer," *USA Today*, Jan. 9, 2019.

3 "The economy, jobs top list of concerns by Ohio voters," *Dayton Daily News*, March 12, 2016.

4 "Top voting issues in 2016 election," *Pew Research Center*, July 7, 2016.

5 Ulrich Orth, et al, "Understanding the link between low self-esteem and depression," *Current Directions in Psychological Science*, Dec. 3, 2013.

\$10.8b



Legal cannabis sales increased 34% nationwide in 2018, to \$10.8 billion.

And yet some jobs seem to count more than others. Political pundits still argue over jobs saved⁶ or lost at Carrier's Indiana factory.⁷ Job-count dips in the coal mining industry are treated like lost national treasures, while other industries disappear without notice or mourning.

Meanwhile, one American industry continues to record job gains of a magnitude rarely seen in recent history: the legal cannabis industry. Because the federal government refuses to officially count cannabis jobs, though, they don't register in official statistics or economic reports.

For the past three years, Leafly has undertaken an annual survey—our Cannabis Jobs Count project—to provide that missing data.

This year Leafly partnered with Whitney Economics to mount our most ambitious Cannabis Jobs Count yet. Using state-reported data, industry surveys, on-the-ground reporting, Leafly's proprietary data, and economic formulas devised by Leafly and Whitney Economics, we've done what the federal government and most states refuse to do: count cannabis jobs. It's not simple. It's not easy. But the numbers we've discovered lead to one inevitable conclusion: We are witnessing the birth of the next great American industry.

CANNABIS JOBS BY THE NUMBERS

In early 2017, roughly 120,000 Americans worked in the legal cannabis industry. At that time, 29 states allowed medical marijuana. Four states and the District of Columbia had legalized the adult use of cannabis. National sales in legal markets topped \$6.7 billion.

Today, two years later, 34 states have legalized medical marijuana. Ten states and the District of Columbia have legalized cannabis for adult use. Annual sales nationwide are nearing the \$11 billion mark. And the number of Americans directly employed in this booming industry has soared to more than 211,000.

When indirect and ancillary jobs—think of all the lawyers, accountants, security consultants, media companies, and marketing firms that service the cannabis industry—are added, along with induced jobs (local community jobs supported by the spending of cannabis industry paychecks), the total number of full-time American jobs that depend on legal cannabis rises to a whopping 296,000.

By comparison, there are currently about 52,000 coal mining jobs in the United States. American beer makers employ 69,000 brewery workers. And 112,000 people work in textile manufacturing.

Added full-time legal cannabis jobs in the U.S. in 2018 **64,389**

Total full-time jobs in the legal U.S. cannabis industry **211,000**

Total number of direct, indirect, and induced cannabis jobs **296,000**

In 2018, major media outlets heralded the roaring comeback of the U.S. manufacturing sector. That comeback, positive as it is, represented a 2.7% gain in the number of American manufacturing jobs.⁸

In 2018, the cannabis industry posted job gains of 44%. The year prior, the job gain rate was 21%. That growth shows no signs of slowing down. A majority of cannabis consumers in California have yet to transition from the illicit market to the legal market. Michigan, a state with twice the population of Colorado, is expected to open its first adult-use stores in early 2020.

Glassdoor reports that job openings in the cannabis industry listed on its site rose from 858 in December 2017 to 1,512 in December 2018. A search of the keyword “marijuana” on ZipRecruiter returned 3,935 openings across the

United States in late January 2019.

If cannabis job gains follow on at a conservative 20% in 2019, that will represent a 110% gain in full-time jobs in three years.

At the Bureau of Labor Statistics, a division of the U.S. Department of Labor, economists forecast the most in-demand jobs using a 10-year projection. Their latest forecast calls for a 47% increase in home health care aides, a 96% increase in wind turbine service technicians, and a 105% increase in solar photovoltaic installers. Those gains are projected to happen over a 10-year span, from 2016 to 2026.

Legal cannabis tops them all.

Over a three-year span, from January 2017 to January 2020, cannabis jobs are expected to

CANNABIS JOBS 3-YEAR FORECAST

Projected workforce gains in cannabis jobs from 2017 to 2020

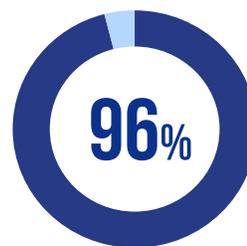


BUREAU OF LABOR STATISTICS 10-YEAR FORECAST

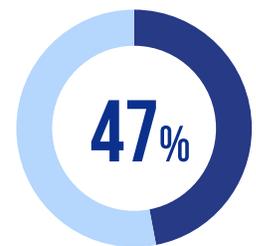
Projected workforce gains in the most in-demand jobs from 2016 to 2026



Increase need for solar photovoltaic installers



Increase need for wind turbine service technicians



Increase need for home care aides

increase by 110%. They're already up 75% in the past two years.

The Bureau of Labor Statistics refuses to count or report those job gains because cannabis remains a federally illegal substance. But they are real jobs, held by real Americans supporting themselves, their families, and their communities. Those cannabis jobs count.

WHY DON'T LEGAL STATES COUNT CANNABIS JOBS?

As a federal agency, the Bureau of Labor Statistics follows federal law, meaning the agency officially considers all cannabis jobs illegal. But there's nothing preventing state labor economists from including legal cannabis workers in their reports on employment within their borders. Or is there?

Actually, there is. Labor statistics are collected using the North American Industry Classification System (NAICS). Canada, the United States, and Mexico use the NAICS system, which is a collection of nearly 20,000 codes delineating specific job categories. If a job or industry does not have its own NAICS code number, that job doesn't exist within the statistical universe of labor economists.

Beau Whitney, the Oregon-based economist who founded Whitney Economics and partnered with Leafly on this year's Cannabis Jobs Count, is no stranger to this issue. He's worked on previous cannabis economy projects and has authored or consulted on a number of reports for the state of Oregon. Whitney recently petitioned officials in Canada and the United States to create NAICS codes that correspond to legal cannabis. Official changes to the NAICS codes, however, happen on a five-year schedule, and the next wholesale changes aren't expected until 2022.

In the meantime, a few government economists are doing their best to describe and quantify cannabis jobs. Officials at Statistics Canada adopted new federal job codes in June 2018 in anticipation of the nationwide legalization of cannabis later that year.⁹

In Alaska, an economist with the state labor department took a run at the numbers in early 2018. Karinne Wiebold picked apart official data, hunted for cannabis jobs hidden in general agricultural numbers, checked new company registrations—looking for telltale terms like Green, 420, or Canna in the business name—and ultimately came up with estimates that aligned with Leafly's previous Cannabis Jobs Counts. Her estimate for late 2017—536 full-time cannabis jobs—came within six jobs of our own estimate of 542.

HOW WE CALCULATED THE NUMBERS

Without NAICS codes, it's difficult to estimate the number of cannabis jobs in a given state. But it's not impossible.

Over Leafly's two previous Cannabis Jobs Counts, we built on a foundation established by economists who have pioneered this field. Adam Orens and his colleagues Miles Light, Jacob Rowberry, and Clinton W. Saloga, at the Denver-based Marijuana Policy Group, established a benchmark with their October 2016 study, "The Economic Impact of Marijuana Legalization in Colorado." Orens, et al., were the first to correlate specific job numbers to cannabis sales. Beau Whitney and the Whitney Economics group have also done foundational work in Oregon, often at the behest of the state Legislature or government agencies trying to get a grasp on the industry developing around them.

At the same time, the economists, researchers, and writers at New Frontier Data, BDS Analytics, and Headset publish regular data dives and updates on cannabis sales, consumer trends, and job estimates. Job-seeking sites such as Glassdoor and cannabis-focused recruiting agencies such as Vangst do excellent work surfacing new data about job openings, industry trends, and salary ranges.

Building on the work established by Whitney, the Marijuana Policy Group, and state economists such as Karinne Wiebold, Leafly examined all the cannabis data recorded in each legal state—from weekly sales figures in Massachusetts, to cannabis tax revenue in Washington, to patient counts in New York, to the tonnage of cannabis sold in Arizona (yes, Arizona measures it by weight). By cross-checking what we know about the average annual spend of a medical cannabis patient, the price of flower, and jobs-per-gross revenue, we arrived at our estimates.

INDIRECT JOBS, INDUCED JOBS, AND TAX REVENUE

In addition to direct full-time-equivalent (FTE) jobs, Leafly also calculated the indirect and induced FTE jobs created by the cannabis industry.

Indirect jobs are occupations in what's often called the "ancillary space"—those companies that depend on or service the cannabis industry but don't touch cannabis products. Some examples are:

- Leafly, the world's cannabis information resource
- Cova, a retail cannabis point-of-sale software company
- Vangst, the industry's leading job recruiting platform
- Vicente Sederberg, a national cannabis-

focused law firm

- GreenBroz, makers of cannabis-specific agricultural harvesters and processors
- Eden Labs, manufacturer of commercial-grade extraction equipment

Induced jobs are those created by the economic impact of direct and indirect cannabis industry jobs. When Leafly hires data analysts and software engineers, their wages circulate through the local economy and support jobs in a myriad of industries.

STATES WITH THE MOST JOB GROWTH IN 2018

Florida added the greatest number of full-time cannabis jobs in 2018, while Pennsylvania registered the largest percentage increase. Washington and Colorado continued to add thousands of cannabis jobs, but their double-digit percentage gains actually represent slowing and plateauing in an industry where triple-digit growth is not uncommon.

In Florida, the buildout of the state's medical marijuana industry produced an enormous hiring boom. At the end of 2017, there were 1,290 direct full-time jobs in the state's medical cannabis industry. One year later, we count 10,358. That hiring surge was spurred in part by a near-tripling of Florida's medical marijuana patient population, which grew from roughly 65,000 to 165,000 in 12 months.

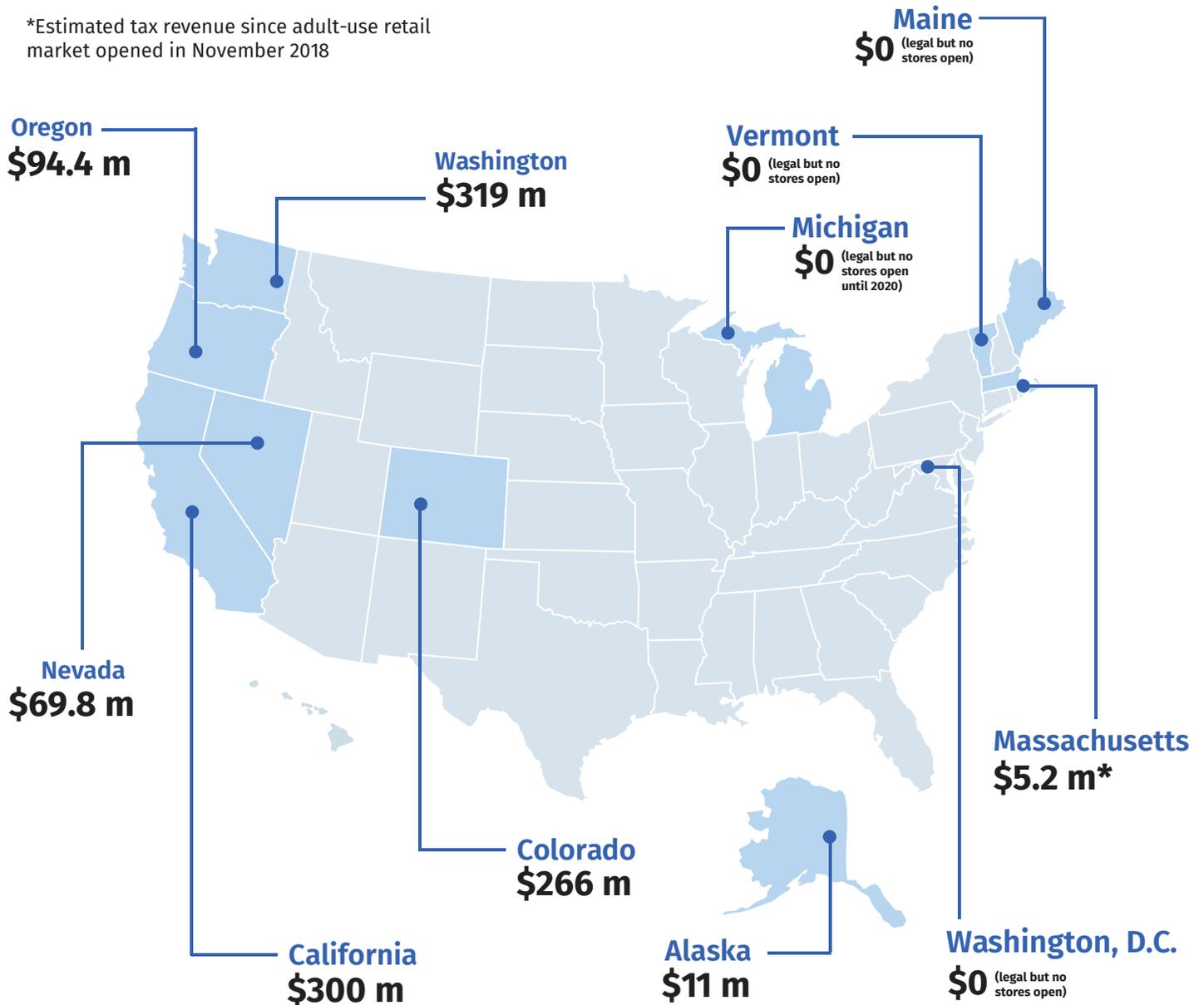
In Pennsylvania, the opening of the state's medical marijuana dispensaries brought about a similar hiring spree. Leafly estimated that only 90 full-time cannabis jobs existed at the end of 2017. By the end of 2018, we tallied 3,878.

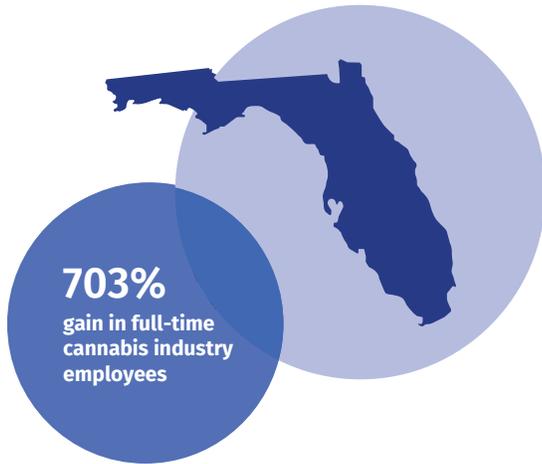
TerraVida, a cannabis company operating three dispensaries in the Philadelphia region, typified the 2018 surge.

2018 CANNABIS TAX REVENUE IN ADULT-USE STATES

The adult-use cannabis industry also supports induced jobs through the taxes paid on cannabis products. There are 10 legal states (plus Washington, D.C.), but only seven currently tax and regulate revenue-producing stores. Those taxes—typically 10% to 37% above and beyond local sales tax—support jobs in school construction, drug abuse prevention programs, medical research, and other areas.

*Estimated tax revenue since adult-use retail market opened in November 2018





Founder Chris Visco began 2018 with three employees. In January 2019, a TerraVida all-company meeting required room for 92. That’s a scale-up rate of 3,000%. And they don’t hire on the cheap. “No one here makes under \$15 an hour,” says Visco. (The state minimum wage is \$7.25.) “We have full health benefits for all our full-time workers, six weeks paid maternity leave, and life insurance. We offered family and medical leave before state law required it.”

Other states saw spikes in job growth, too. Alaska grew fivefold, from 542 jobs to 2,810. Maryland started 2018 with 559 jobs and added another 2,624. Illinois and Minnesota doubled their cannabis job count. New York tripled the number of cannabis workers in the state. Despite a relatively small residential population, Nevada leapt into the nation’s cannabis big leagues in 2018, moving from 4,193 jobs to 11,766 jobs.

We expect Nevada to continue to grow far beyond its residential scale due to the 39 million visitors Las Vegas hosts every year. The nation’s newest medical marijuana state, Oklahoma, is just opening its doors but already shows signs of a boom. There were zero cannabis jobs in Oklahoma in 2017 and 2,107 at the end of 2018. Given Oklahoma’s uncapped

licensing system and lenient regulations, that number could double in the coming months.

Data from other states lead us to conclude that it takes years for a state to make the transition from illicit to legal market and reach full maturity. It’s been five years since Colorado and Washington opened their first adult-use retail cannabis stores, and we’re just now seeing a slowing in the rate of cannabis job growth in those two states.

In California, meanwhile, the upheavals involved in the 2018 transition from an unregulated medical market to a regulated medical and adult-use market actually resulted in a dip in the overall legal market size, from \$2.6 billion to \$2.5 billion. Based on normal cannabis consumption patterns and five years of data from Colorado and Washington, we estimate that fewer than 20% of California consumers have transitioned to the state’s legal, licensed market.

PREDICTING JOB GROWTH IN 2019

At the moment—early 2019—Oklahoma is experiencing the “wild west” boom that California and Colorado went through



CANNABIS JOB GAINS IN 2018

State	Jobs Added in 2018	% Gain in Jobs	Jobs, Jan. 2018	Jobs, Jan. 2019
Florida	9,068	703%	1,290	10,358
Nevada	7,573	181%	4,193	11,766
Washington	7,035	26%	26,556	33,591
Arizona	5,120	82%	6,250	11,370
Colorado	4,595	17%	26,891	31,486
Pennsylvania	3,788	4208%	90	3,878
New York	3,726	278%	1,341	5,067
Maryland	2,624	469%	559	3,183
Alaska	2,268	418%	542	2,810
Oklahoma	2,107	-	0	2,107
New Jersey	1,834	355%	516	2,350
Illinois	1,668	123%	1,352	3,020

when their first dispensaries opened years ago. We're watching Michigan closely, but the state's new cannabis legalization law doesn't require state officials to offer cannabis business licenses until Dec. 6, 2019. If the state runs up against that deadline, we won't see the opening of Michigan's retail market—and a concurrent spike in job gains—until 2020.

Michigan should ultimately be a \$2 billion market when it reaches maturity, but it will take years to get there. Meanwhile, Massachusetts continues the slow rollout of its first-in-the-East adult-use market, with a few more stores opening every month. In the near term, we expect Massachusetts to double its cannabis jobs in 2019, from 3,020 to around 6,000.

CONCLUSION: UNLEASH THE GREAT AMERICAN JOB CREATOR

Amid the roiling debate over American jobs, the legal cannabis industry remains a substantial

and unrecognized engine of grassroots job creation. These are high-quality positions with openings at all levels of experience—and in 34 states, not just Colorado and California. Many offer benefits and quick advancement. State officials need not offer any tax incentives to lure the jobs to their locale. In fact, cannabis job growth is proceeding at double-digit rates in many states despite being overtaxed locally and heavily penalized at the federal level.

The recent public backlash over tax incentives offered by New York officials to Amazon—and the company's subsequent withdrawal from its planned Long Island City campus—illustrates a rising concern among many voters. Too much is given away to big corporations in the name of job creation. Meanwhile, New York's medical cannabis industry created 3,276 jobs last year alone. Medical marijuana, like most medicine, is not taxed in New York. But if the state acts on Gov. Andrew Cuomo's call to legalize adult-use marijuana, those nonmedical sales could be

THESE STATES WILL ADD JOBS IN 2019

State	Jan.2019 Jobs	Projected Jan. 2020 Jobs	Number of Jobs Added	Projected Increase %	Why?
California	47,822	58,083	10,261	21%	More consumers move from illicit to legal market, bumping CA to a \$3b legal market
Massachusetts	3,020	12,584	9,564	317%	Expect MA to be a \$650m market by end of 2019
Florida	10,358	15,494	5,136	50%	Additional 100,000 patients expected in 2019.
Oklahoma	2,107	4,407	2,300	109%	Expect up to 75,000 patients by Dec. 2019 in lightly regulated market
Arkansas	135	960	825	611%	First 32 dispensaries to open in 2019

taxed at a rate of 15% to 35%, which is typical for adult-use cannabis excise taxes.

In the 34 states where medical cannabis is legal, there are inspiring stories of Americans starting their own businesses and hiring a wide range of local workers with diverse backgrounds and levels of experience. Here are a few examples:

- In New York City, three colleagues (Kali Wilder, Safon Floyd, and Sirta Wright) left high-profile jobs at Black Enterprise magazine to start their own cannabis-focused enterprise. EstroHaze, their startup, is now a leading media and consulting firm in the cannabis space.
- In Philadelphia, Chris Visco left a successful retail career to start TerraVida Holistic Centers. Her company is now the largest medical cannabis dispensary in Pennsylvania.
- In rural Oklahoma, farmer Ben Neal converted one-third of his tomato-and-lettuce greenhouse into a medical cannabis grow. Late last year he harvested more than 200 pounds of high-demand strains.

- High in the Colorado Rockies, farmer Rob Trotter grows craft-scale cannabis renowned for its potent levels of cannabigerol, a rare cannabinoid known as CBG. Trotter also happens to be blind.
- In Michigan, entrepreneur Hilary Dulaney founded the state's first cannabis trade publication, started a business consultancy, and created a premium vaporizer manufacturer. She recently sold the latter, AccuVape, to Freedom Leaf for an undisclosed amount.

These entrepreneurs required no tax breaks. In fact, many of them operate under the onerous rules of IRS Section 280E, under which they pay crushing federal taxes that were originally intended to break illegal drug cartels. They're also hit with the harsh realities of America's federal financial rules, which discourage banks from opening simple accounts for legal, tax-paying, state-licensed cannabis companies. Many have no choice but to operate on a cash-only basis. This forces retailers to hold large amounts of cash onsite and dispense weekly wages in \$50 bills, putting

their employees at greater risk for robbery and physical harm. Some state-licensed dispensaries have actually purchased old-fashioned freestanding bank vaults to hold their overnight cash.

That cash economy also undermines the ability of the state-regulated cannabis industry to eliminate the illicit market, which surveys have shown to be a primary reason voters cast ballots to legalize and regulate. A recent study by Jonathan Ashworth and Charles Goodhart of the London School of Economics¹⁰ found that Canada experienced an unusual drop in the amount of circulating cash in the weeks prior to and after the nation's Oct. 17, 2018, legalization of adult-use cannabis. Their theory: Cannabis consumers who previously purchased on the cash-driven illicit market switched to legal outlets, which were able to process credit card transactions. If true, this indicates that convenience could be a major driver of illicit-to-legal migration. In the United States, credit

card companies still refuse to process the transactions of state-legal cannabis companies due to federal banking laws.

Remedies are available in Congress. The STATES Act, which would withdraw federal oversight from cannabis in states that wish to regulate it themselves, continues to draw more supporters and co-sponsors. The Secure and Fair Enforcement (SAFE) Banking Act, which recently received its first committee hearing in the House, would allow major banks and credit card companies to work with legal state cannabis companies without fear or favor.

In 2019, America's cannabis industry is one of the nation's greatest economic success stories. That success deserves to be recognized and celebrated. This is an industry that welcomes strict regulation and fair taxation, asking only to have its outdated and unjust federal penalties removed.

ABOUT THE AUTHORS

Bruce Barcott, Leafly's deputy editor, is the author of *Weed the People: The Future of Legal Marijuana in America*, and the Time magazine special issue, "Marijuana Goes Main Street."

Beau Whitney is the founder of Whitney Economics, a business and management consulting group based in Portland, Oregon.

ASK THIS, DON'T SAY THAT

5 Tips For Getting Hired



Karson Humiston is the founder and CEO of Vangst, the cannabis industry's leading recruiting platform. Since creating Vangst in 2015, Humiston and her

staff of 50 (and growing) have partnered with more than 600 companies to place 10,000 jobs across 14 states. We asked her to offer a few tips for people considering a leap into the cannabis industry. She responded:

1. Be flexible. Every business in the cannabis industry is a startup. Keep this in mind when interviewing. You're speaking with people at a startup company in a startup industry. Many companies don't have full HR departments established yet, so be ready to adapt and absorb imperfections in the interview and hiring process.

2. Ask questions. Ask about the company's leadership, funding, licensing, and future plans. Learn about exactly where the company operates. Is it in one state or 10? Does it operate in medical cannabis states only, adult-use only, or both? A couple things to keep in mind: It's important to work only with licensed operators in the cannabis industry. And if a company isn't funded well enough to survive its pre-revenue period, you'll want to know that (and also how they plan to survive until the revenue arrives).

3. Expect change, embrace it, and enjoy it. Change is the only constant in the cannabis industry, and things happen fast. Somebody who's been in the cannabis industry for three years is considered a seasoned veteran. From regulation and licensing, to constant growth, to challenges with the industry being federally illegal, cannabis companies are constantly changing. A single tweak to a state regulation can force a company to change its product line or pivot its entire strategy. If you're someone who thrives in a fast-paced, constantly changing environment, you will enjoy working in the space.

4. Show how your particular skills and experience are relevant to the company you're interviewing with. Interest and passion for the cannabis industry itself is wonderful, but companies need people who bring more to the table than just passion.

5. Be prepared to wear a lot of hats. Most cannabis companies have fewer than 50 employees, so all team members are expected to roll up their sleeves and do what it takes to build the company. If you're someone who doesn't do well without a very structured and rigid work environment, the cannabis industry isn't for you. If you thrive in an environment of change and opportunity, this is the place to be.

WHAT'S IT PAY? CANNABIS JOBS AND SALARY RANGES

Like any startup industry, cannabis has entry-level hourly wages, million-dollar IPO payouts, and everything in between. According to a recent data dive by Glassdoor, the median paycheck in the cannabis industry is 11% higher than the U.S. median salary of \$52,863.

Here are a few of the salary and hourly wage ranges for some of the industry's most in-demand jobs, courtesy of the data team at Vangst.

DISPENSARY STORE MANAGER

Low	\$41,500	Oversee day-to-day operation of a medical or adult-use cannabis retail location. Responsible for hiring, training, and managing all dispensary staff.
Average	\$56,250	
High	\$65,400	
Top	\$98,000	

COMPLIANCE MANAGER

Low	\$45,000	Ensure compliance with local, state, and federal laws and regulations. Implement tracking and internal compliance audits. Track pending and current laws and regulations. Create new policies and procedures and ensure staff has an understanding of all compliance requirements.
Average	\$62,500	
High	\$81,750	
Top	\$149,000	

BUDTENDER

Low	\$12/hr	Provide excellent customer service to all patients and customers. Provide information to patients and customers on product choices, consumption methods, compliance, and safety.
Average	\$13/hr	
High	\$14/hr	
Top	\$16/hr	

DIRECTOR OF EXTRACTION

Low	\$47,000	Oversee all cannabis extraction and refinement operations, including facility design, laboratory setup, standard operating procedure development, regulatory compliance, hiring, training, and personnel management.
Average	\$72,000	
High	\$135,000	
Top	\$191,000	

DIRECTOR OF CULTIVATION

Low	\$47,000
Average	\$88,000
High	\$140,000
Top	\$250,000 +

Oversee all cultivation operations to ensure the production of compliant and high-quality cannabis. Responsible for ensuring the highest levels of plant health, potency, and production.

TRIMMER

Low	\$11.50/hr
Average	\$12.50/hr
High	\$13/hr
Top	\$14.50/hr

Manicure and prepare all harvested flower to be sold in medical and recreational cannabis retail locations.

OUTSIDE SALES REPRESENTATIVE

Low	\$28,000
Average	\$58,800
High	\$73,500
Top	\$150,000

Sell products, services, and technology to cannabis businesses.