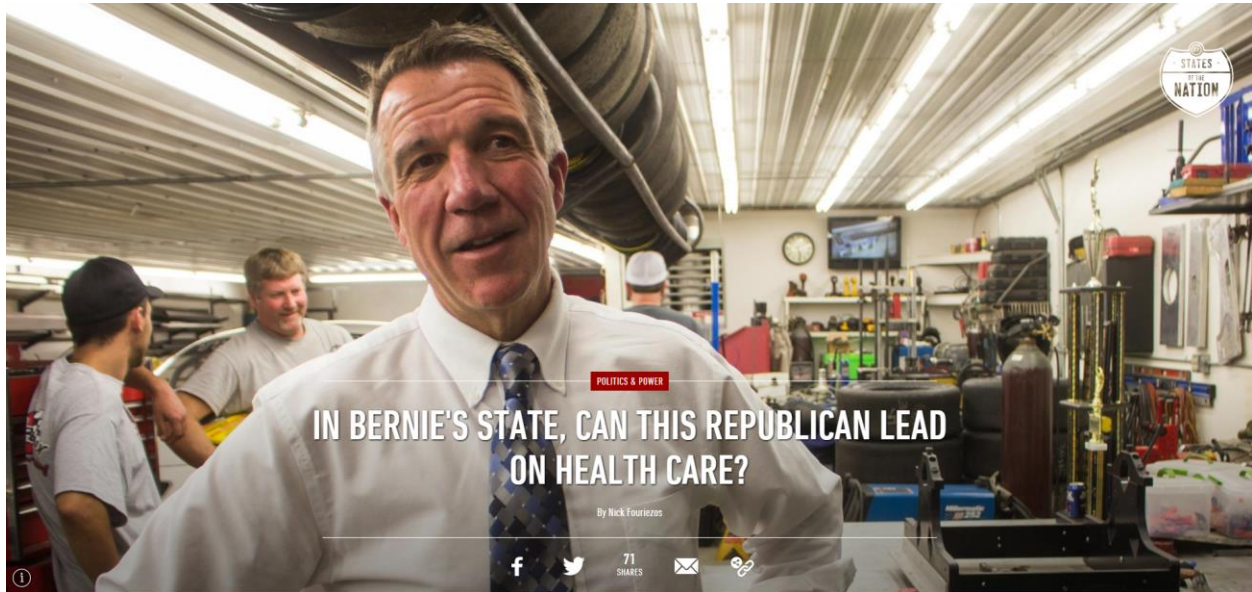


ECONOMIC DEVELOPMENT MARKETING  
EARNED MEDIA RESULTS  
January 5, 2018

# OZY.COM



## WHY YOU SHOULD CARE

Because conservatism isn't always where you expect to find it.



Join OZY as we travel through all 50 states to uncover the challenges and meet the innovators reshaping a country that's more divided than ever.

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When Phil Scott barrels his No. 14 stock car around Thunder Road outside his hometown of Barre, Vermont, it's easy to assume the 59-year-old has a need for speed. After all, he's raced motorcycles and snowmobiles everywhere from America's Midwest to Ontario, Canada, amassing dozens of wins across a three-decade career.

Ask Scott, though, and he'll dig into the psychology, not the adrenaline rush: "There are some good drivers, and some not so good; some who are very emotional, some who are more patient than others. And then there are some who are driving over their head." Soft-spoken and silver-haired, Scott couldn't be more at home speaking from his crew's garage: "It's all about strategy. And trying to not over-drive the car."

Good advice for the racetrack, and a fitting allegory for Scott. In November, the driver won another race — this one to become the Republican governor of Vermont, in the backyard of Bernie, no less. Having served as lieutenant governor and a state senator, Scott advertised himself as a cautious driver, replacing Pete Shumlin, the Democrat governor who promised

the moon with the nation's first single-payer health care system and then failed to deliver. Scott's campaign message was simple: Elect me, and I will make Vermont more affordable. Facing a revenue downgrade and a deficit upon taking office in January, his priorities have remained similarly mild-mannered while trying to reverse what he called the state's "6-3-1" problem: six fewer workers, three fewer students and nearly one baby born into opioid-related addiction each day. "We had to live within our means," he says, while trying to steady the wheel.



 Phil Scott speaks from his No. 14 stock car crew's garage near Montpelier, Vermont.

SOURCE • NICK FOURIEZOS/OZY

His strategy has panned out politically. Fiscal responsibility sells in Vermont, with money-minded Republicans and independents launching Scott into office. "Economic issues are always the No. 1 concern of Vermonters," [wrote](#) local columnist and radio host Mike Smith. This summer, Scott passed the budget without levying additional taxes or fees, but the Green Mountain State still has other economic concerns. Property tax rates are rising — in Vermont, taxes are tied to per-pupil spending in the schools, and with 20,000 fewer students than just 15 years ago, tax bills have gone up. Plus, an aging workforce is putting stress on the tax base, a problem throughout New England as the region tries to attract talent while manufacturing jobs continue to flock south.

Vermont faces, in microcosm, the same struggle many states face, but with a key twist — a state assembly led by Democrats but as a whole more moderate than most. “It’s not like Washington, D.C. Here, very seldom do we take sides and bicker,” says state senator Dick Mazza, a Democrat who has supported Scott’s rise at every political rung. In Vermont, Scott has successfully campaigned on management skills and fiscal responsibility, while tacking moderate on abortion and gay marriage. And Democrats in D.C. applaud his willingness to stand against Trump — he was one of a handful of Republican governors to publicly denounce the president’s DACA stance and the AHCA Obamacare repeal bill this summer. “He’s just a guy who plunges in,” says Peter Welch, representative for Vermont’s at-large U.S. congressional district. “Whatever the job is that needs to be done, that’s the job he wants to do.”

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That was never more true than with Scott’s Everyday Jobs Initiative — think *Dirty Jobs* and *Undercover Boss* gone political. As lieutenant governor, Scott worked 35 different professions, from emergency rooms to distilleries, alongside bakers and veterinarians. “I was working side by side with those people, who were working two or three jobs trying to make ends meet,” he says from his office in Montpelier. “I thought to myself: Why is it we struggle so much here?” And that’s when he concluded: “We have an affordability problem.”

And he set to work, part of a hands-on approach his mother, Marian DuBois, says he’s shown since he was a woodshop student, racing homemade buggies down Onward Street in Barre. His father, a double-amputee World War II veteran, died when Scott was 11, and the middle child of three boys stepped up. “He took on the responsibility very young,” DuBois says.

As a 20-something with an industrial education degree from the University of Vermont, Scott started a motorcycle business. When he tried to expand it, the expansion effort failed after a year of red tape. Later, as a co-owner of DuBois Construction with his cousin, he encountered similar regulatory frustrations. It prompted his entrance into Republican politics, and he became a state senator in 2000.

Scott has professed a more cautious approach to politics than his racing days would suggest, yet his initiatives are blazing a trail all the same. His administration has championed a \$35 million housing bond to grow low- and middle-income



**i** Phil Scott raced at Thunder Road earlier this year, becoming the first sitting governor to win a stock car race and earning his track record 30th career victory.

SOURCE = COURTESY PHIL SCOTT

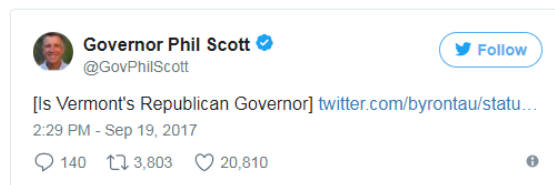
housing. The hub-and-spoke opioid addiction treatment model, which Vermont has had since 2000, was expanded by Scott and has helped eliminate waiting lists that numbered in the hundreds in some cities.

By far the most striking effort is an “all-payer health care” pilot program. The feds have given Vermont a waiver to experiment with Medicare, Medicaid and commercial clients. Participating providers will be paid a per member-per month renumeration. Proponents say it should lower costs and encourage hospitals to be proactive about patient health and wellness, shifting the focus from treatment to prevention. What’s more, the plan aims to have 70 percent of insured residents covered by an accountable care organization (ACO) by 2022. While single-payer hones in on how to collect health care money, this tackles how to actually lower the cost of goods and services. “Here in Vermont, we’re small. It allows us to be nimble. You can test the theory here,” says Al Gobeille, secretary of the Vermont Agency of Human Services.

If the pilot program succeeds, health care could supplant Ben & Jerry’s as the state’s most important export. It would also launch Scott to another political stratosphere: remember Mitt Romney, another blue-state Republican governor who hung his hat on health care. Of course, Scott will have to prove Vermont can manage the initiative. While the state recently won a SCAN Foundation Pacesetter Prize for Affordability and Access in elder care, it bungled the rollout of Vermont Health Connect, the state-based marketplace designed to deliver the Affordable Care Act to recipients across the state. The new plan was hashed out while Scott was lieutenant governor, and he is now charged with leading its launch for the benefit of all Vermonters. “His point is, ‘I want to make it more affordable, I want to grow the economy and take care of the most vulnerable,’” says Gobeille, before adding, “You’re not going to do that without innovation.”

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If you find it surprising that a little-known state governor could play an outsize role in the nation’s roiling health care debate, you’re not alone. When we meet in his Montpelier office, Scott is still chuckling over a Twitter exchange from the day before:

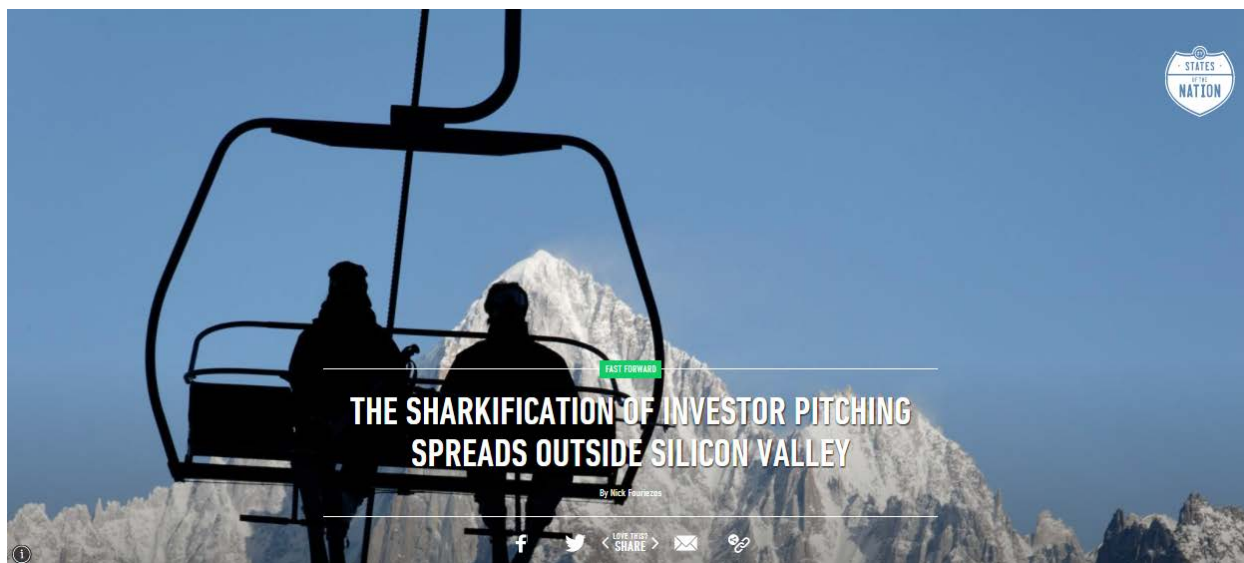


The online exchange with Washington, D.C., journalists pokes fun at Scott’s anonymity — and he’s fine with that. “We like to lighten things up a bit. Twitter has become so divisive in some ways,” he says.

Less lighthearted is the criticism Scott has faced from some for not committing longterm funds to the cleanup of Lake Champlain, Vermont’s largest water source. Right now, he’s agreed to \$56 million annually the next two years, at the recommendation of the state treasurer. But before committing for the full two-decade cleanup, he’s suggested the state should study “existing resources, financial tools and potential organically-generated revenue,” in lieu of raising taxes, his spokesperson says. He also took flak from teacher unions after suggesting a shift of school employee health care negotiations to the state level – currently between districts and employee unions – which he said would make agreements more uniform, and could result in cost cuts for teachers, plus \$26 million in savings for taxpayers. Regardless, whether he can appease his critics and win re-election in 2018 will largely rely on his ability to deliver on the one concern that dwarfs all others: affordability. “For Scott, the reality is this,” Smith explains, “when you live by the economic message, you can be politically slain by it.”

Scott insists he’s willing to take that gambit — but he’s going to do it gracefully. That’s his way, he says. And you better believe he’s willing to invoke that mythology as a metaphor for his politics: “There are some racers that will drive right through you to move up a position. But I don’t rough somebody up to get by them. I pass them clean.”

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## WHY YOU SHOULD CARE

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It was an early morning in March 2015 and frighteningly cold, with whiplash winds treacherous even by the standards of central Vermont's Mad River Valley. From their perch at Sugarbush Resort, Christine Dodson and Sascha Mayer plotted their plan of attack.

The two co-founders were looking to raise money for Mamava, an early-stage startup that sells lactation “suites” for nursing mothers in public spaces like airports and sports stadiums. They had a competitive advantage: Dodson, a “killer” Alpine skier, pitched investors on the [chairlift](#) — “like speed dating,” she says now — then rocketed down the slopes to get back in line, increasing the chances of landing the next Daddy Warbucks. Meanwhile, Mayer, who wasn't as keen a skier but had mastered the team's elevator pitch, worked the lodge for investors deterred by Mother Nature.

What brought them to the wilds of Vermont is part of a growing trend — pitch events that are held in decidedly nonbusiness settings. The point is to get people out of suit-and-tie meetings where

startup souls go to die, and start getting entrepreneurs used to selling themselves in more natural — albeit often adrenaline-infused — environments. In the past, investors might work university tech fairs for fresh talent or go to large-scale conferences, but nowadays, “what they’re doing is participating in events,” says Cairn Cross, managing director of FreshTracks Capital, which runs Peak Pitch, where Dodson and Mayer did their tag team, and Road Pitch, an annual summer event where motorcycle-riding investors visit 10 towns across Vermont, hearing pitches at each one.

Following the template of Peak Pitch in the Green Mountain State, chairlift-inspired pitch events have emerged everywhere from Albuquerque, New Mexico, to Sandpoint, Idaho. And capital-seeking entrepreneurs aren’t just heading for the ski hills. This summer Alexandria, Virginia, helped more than a dozen Beltway startups make their pitches to VC reps aboard a charter boat on the Potomac. The SunDown RunDown series operating in six Ohio cities has budding business folks conduct pitch-and-Q&As in local bars.

The shift comes in part from what the startup community calls the “sharkification” of investing. Buoyed by the popular ABC show *Shark Tank*, a company’s medium for delivering its message — the pitch — has become more important than ever. The backdrop, then, has seen a bump in importance too: After all, what’s narrative without setting? Cookie-cutter events have encouraged folks like Cross to get creative: “Why do I want to rent a hotel room in a chain hotel and bring in a lot of people ... when that event would be the same ... in Boston or Hartford or Albany?”

Unconventional settings for business pitches can be an advantage for savvy investors looking for the next Facebook where competitors are not. Most investors aren’t searching outside the obvious hunting grounds: Nearly four-fifths of American investment capital goes to companies based in three states: New York, California and Massachusetts, notes [Ross Baird](#), president of Village Capital in Washington, D.C.

For an entrepreneur in satellite Silicon Valleys, such as [Chattanooga, Tennessee](#), or [Blacksburg, Virginia](#), the real value in unconventional events is finding local, like-minded mentors who can be mined for more than money. Baird points to the Rise of the Rest bus tour, which his organization runs in conjunction with AOL co-founder Steve Case. It visits five unlikely cities in five days and invests hundreds of thousands in local startups. “The pitch event is what the media likes, but what actually delivers value is creating a platform where people can develop relationships they might not otherwise have,” Baird says.

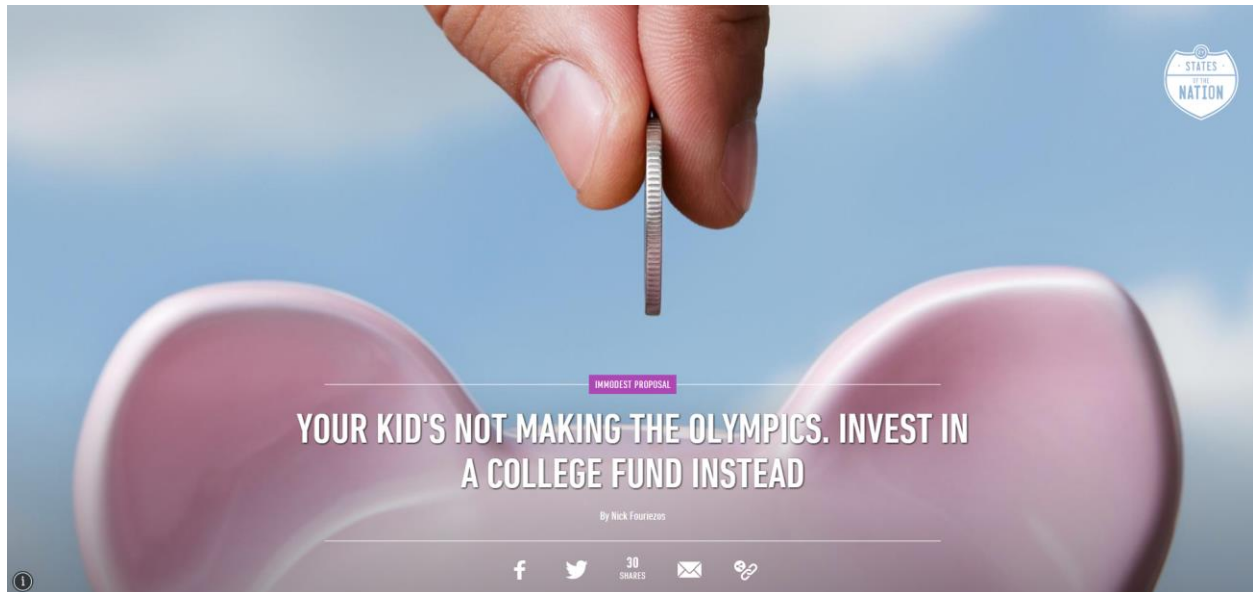
Still, while *Shark Tank* may have contributed to the gamification of pitching events, it may not be improving the investing world’s track record. “The biggest problem in our innovation economy is we concentrate resources and funding in a few places and people — and the sharkification of the entrepreneurial funding landscape actually increases that concentration, rather than making it more inclusive,” says Baird, who tackles the issue in his book, *The Innovation Blind Spot*. Entrepreneurs are often rewarded for pizzazz over production. Meanwhile, huge deficiencies exist: Less than 5 percent of U.S. investments went to female founders in 2015 and less than 1 percent to companies led by African-Americans or Latinos.



The primacy of the pitch has become ubiquitous in other fields too, says Dodson, whose background is in marketing. “Nobody wants to watch a five-minute brand video anymore,” he says. “Even 30 seconds is ridiculously long. They want the five-second one. That’s what’s happening culturally, and the investment world is mirroring that.” The give-it-to-me-quick mindset can lead to unrealistic expectations, Cross says: Anybody expecting instant results will be disappointed. “It’s rare that somebody elbows their way to the front of the crowd at a pitch event and says, ‘Tell me what you need and I’ll write you a check.’”

At their best, though, unconventional pitching events can create a community for peer review as well as lead to investment, which was the outcome for Dodson and Mayer. In *Shark Tank*, Mayer notes, “the conflict seems embedded in those relationships.” But at Peak Pitch, the pair were seeking a partner. They received one, months later, when they secured an initial \$400,000 investment from FreshTracks Capital, which Cross says has discovered six of its 43 funded companies from the chairlift event. Now Mamava’s lactation pods are in hundreds of locations nationwide, including airports in New York and the Bay Area, hospitals in Georgia and Louisiana, and stadiums from Fenway in Boston to Mile High in Denver. “In a way, it’s harder than Silicon Valley,” Dodson says, “but in a way easier. People are rooting for you here.”

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## WHY YOU SHOULD CARE

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In Vermont, [Cairn Cross](#) knows many parents enroll their children in the dozen or so ski academies that dot the small state, eager to see their child become an [Olympian](#) one day. It's a conversation he's often privy to, having both skied collegiately — at Montana State University, a perennial contender — and raised kids in the Green Mountain State. However, Cross thinks podium-chasing parents are going about it the wrong way: “When kids show the least bit of ambition or interest in something, I think U.S. parents these days are ripe to jump on that little kernel of interest and be like, ‘Oh, my God, my kid is going to be a symphony musician, a Broadway actor, etc.’” Cross says. “And boom! They’re piling it on.”

And piling on the expenses too. Which is why parents should reconsider investing in a child's sporting specialty and think about directing those funds somewhere more likely to contribute to a desired outcome: a college fund.

## SPECIALIZING IN ANY SPORT IS, AT BEST, A NEBULOUS INVESTMENT.

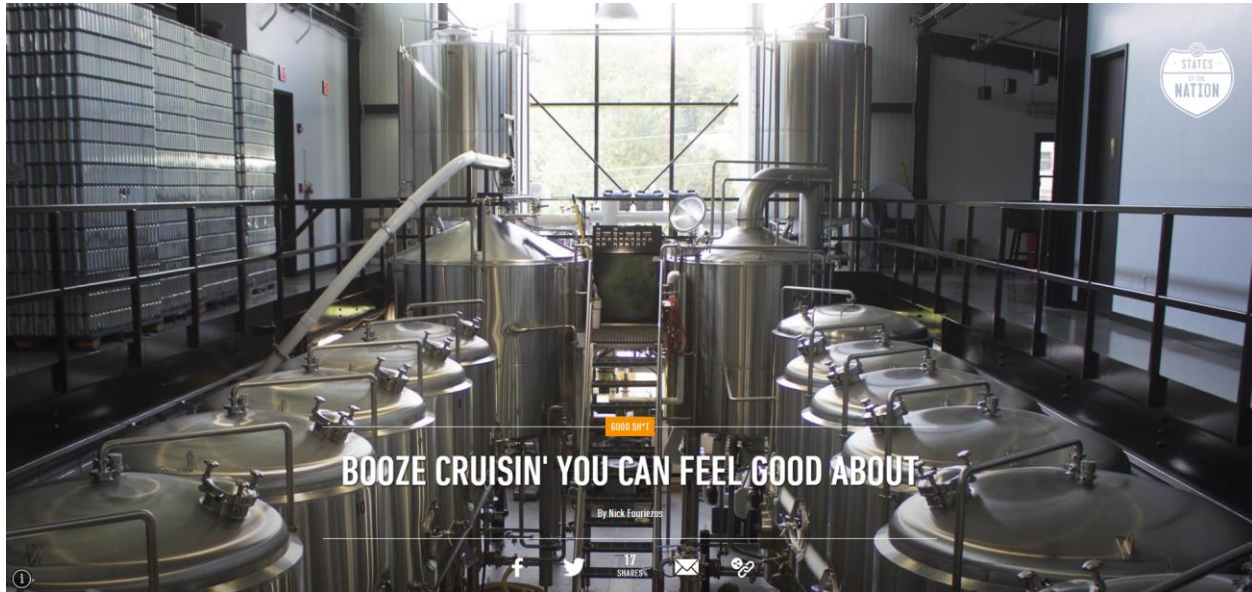
The pressure to specialize has ratcheted up with increased competition in amateur and even elementary school sports. And it's reaching into the nooks and crannies of athletics, to previously under-the-radar sports such as equestrian, rowing and, yes, skiing. Surely, the desire to conquer and succeed with singular focus is part of American Manifest Destiny. But it could also be detrimental to the student athletes themselves. Studies have not only shown that early specialization can lead to increased injury, stress and burnout, but also that training before middle school age doesn't make a significant difference in athletes' abilities to reach elite status.

Those at the pinnacle of youth skiing understand the risk specialization poses for most. "In many cases, that's not a positive athletic development in general," says Willy Booker, head of school at Burke Mountain Academy. The high school exclusively serves eighth to 12th graders. Students spend their mornings skiing until noon in the winter before switching to an afternoon slate of classes. The goal is to get the reps necessary to one day compete at the highest level. "It's a sport that requires that," Booker says, compared to football and basketball, where elite athletes might be able to succeed with less practice.

From a purely financial standpoint though, specializing in any sport is, at best, a nebulous investment. And at its worst economically, it looks like the ski academy system, where annual tuitions hover at \$55,000 or more. It's a mistake to view it from a "purely transactional level," as Booker puts it. Most of his graduates will play in the NCAA — although the school boasts 33 Olympic alumni, including five in the 2014 Sochi [Winter Olympics](#) — but only a few schools offer scholarships these days, and they are mostly partial ones. "What we try to focus on is there are a lot of lessons you learn competing on a high level in skiing that will serve you well for the rest of your life," Booker says.

Across the sports spectrum, parents sometimes encourage their children to specialize — and will devote their "time and treasure" supporting that — in the often vain hope of earning admission and even a scholarship to college, says Welch Suggs, an associate professor at the University of Georgia. But only about 2 percent of high school athletes receive a scholarship — just six collegiate sports even offer full scholarships — and the average amount is about \$11,000 per year, according to the NCAA. That's some tough math. Our takeaway? Save your cash, let your middle schooler diversify their athletic résumé and invest in a college fund instead.

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## WHY YOU SHOULD CARE

Because now you can donate your hangover to a good cause.




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It's Sunday morning, your head is screaming like a sprung fire alarm, and you're still grappling with the questionable decision you made before tucking into bed the night before. If you're bingeing in Vermont though, perhaps you don't have to hold your head in shame. By **boozing** in the Green Mountain State, you might just be **saving the planet**.

So pat yourself on the back — after taking some aspirin, of course. Craft breweries in Vermont are becoming leaders in alternative methods for energy conservation and wastewater adaption. Rock Art Brewery, in Morrisville, is 100 percent solar-powered, while nearby The Alchemist in Stowe already has one facility completely fueled by the sun's rays (and another on the way). In Middlebury, Woodchuck Hard Cider is getting a quarter of its energy through the Cow Power program, receiving solar energy from local farmers. Meanwhile, Magic Hat Brewing Company in Burlington has a digester that turns spent grain and wastewater into energy, reducing the environmental cost and impact of their operations.



 Craft breweries are doing it for themselves when it comes to energy.

SOURCE • NICK FOURIEZOS

With a state motto of “Freedom and Unity,” Vermonters are working together on cost-effective energy solutions at a time when [craft breweries](#) are experiencing a national boom. The total number of U.S. breweries jumped from 2,475 in 2012 to 5,301 in 2016, according to the Brewers Association. Last year the highest annual percentage growth came from craft breweries — the addition of nearly 1,000 microbrews, gastropubs and regional breweries nationally caused a 16 percent jump. Of course, all that mom-and-pop growth has another effect: a growing environmental footprint. “There are a lot more small breweries that I think just aren’t aware of what steps they can take,” says Jenn Kimmich, a co-owner of The Alchemist.

Government officials are becoming wiser to the impact booze can have on the environment. In May 2016, Magic Hat president Mark Hegedus was surprised when Gina McCarthy, the U.S. Environmental Protection Agency administrator, called to say she was stopping by while in Burlington. “*I should have heard about this a long time ago,*” he remembers her saying after touring the facilities and digester that now produces 420 megawatts of power per hour. “*What you’re doing is so spot-on. It’s what we need other businesses to actively be looking at.*”



 Matt Nadeau co-owns Rock Art Brewery in Morrisville, which recently became 100 percent solar-powered.

Regardless of whether Hegedus' recollection is accurate (McCarthy did not respond to our request for comment), the exchange underscores the challenge breweries face: informing the public of their increasing energy independence. Rock Art has embraced marketing, adding a "Vermont's 1st 100% electric energy" label on its products. "Did our sales double when we announced we were solar? No," says co-owner Matt Nadeau. "A lot of it is just for us." Magic Hat sells its leftover hops and malts to local farmers, and has even opened its grass up for researchers from local universities to study. In June, The Alchemist won a statewide award for maintaining cleaner water and creating less waste, which they achieved in part with a million-dollar investment in treatment equipment. But they've also used side-streaming to filter out dirty water, creating a cleaner product for local government to deal with down the line. "This is the equivalent of composting at home — everyone can do it," Kimmich says.

## HOW TO IMBIBE ON A FEEL-GOOD VERMONT BOOZE CRUISE

- Take a free tour at Magic Hat. Visit its bizarre showing room and the "morgue," a fridge of old brews that could "come back to life" in the form of a seasonal encore. Have the Heart of Darkness lager or its Not Quite Pale Ale, the classic #9.
- Order an Alchemist Heady Topper or Focal Banger: With most of its delivery network within 30 miles, it doesn't get any fresher.
- Taste a legit, sun-powered Vermont double IPA at Rock Art Brewery. Popular choices: the Limited Access and Ridge Runner.

# VentureBeat

## HEARTLAND TECH

### 4 advantages small states have over big-city business hubs

AARON POLLAK, VENTURE.CO

OCTOBER 23, 2017



Above: Montpelier, Vermont

Image Credit: Shutterstock

When launching a business, not all startup hubs are created equal. For those entering Silicon Valley, New York City, or other notable startup hubs, finding a location that fits your company's specific needs can mean the difference between swimming and sinking. To succeed — particularly for those developing breakthrough technologies — entrepreneurs must have a keen eye for costs of doing business, entrepreneurial

resources, talent availability, and network options. Without these key ingredients, you might as well get out of the kitchen.

When starting my business, I found a smaller business climate was integral to success and expansion. Here's why I chose Vermont — a place that may be known for its cows and maple syrup, but in actuality, is a successful place to scale early-stage tech companies.

## **You get easier access to state and local resources**

In many large tech hubs, the majority of companies are “small fish,” and access to the government officials who influence the local business climate is next to impossible. As my company grew in Vermont, we found organizations like the State Securities Regulators and Department of Financial Regulation to be very open and accessible sounding boards during our development process. Access to state resources has given us great insight into the current position and the future perspective on the many evolving securities regulations that guide our business. Other homegrown companies that have experienced this advantage include Dealer.com, which utilizes assistance from programs like Vermont HITEC to help identify and train employees from a pool of Vermont locals. Logic Supply uses the Vermont Employment Growth Incentive (VEGI), a program that helps companies to hire locals through cash incentives.

Another helpful program that has resulted from these close company/state relationships is the Vermont Training Program, a fund that reimburses businesses for up to 50 percent of the wages of trainees until they are fully productive in their role.

Additionally, the Talent Pipeline Management Project, a program adopted from the U.S. Chamber of Commerce Foundation, plays a critical role in developing talent in the state.



By engaging employers from around the state, Vermont is able to determine specific talent needs and relay that information to education providers.

## **You become truly an integral part of the startup community**

When building a new business — specifically for early-stage technologies — network is crucial. Places like Vermont, where the community is committed to building businesses and supporting local entrepreneurs, already have a strong network in place.

Entrepreneurs can efficiently find other people in their space and quickly receive feedback. Local incubators like VCET and Burlington Generator can also help to build these networks and explain the local investor landscape to you.

Knowing who's who in a smaller environment provides the first steps for breaking down the barriers associated with being a new business. That luxury isn't available in more saturated markets, where the only way to succeed is to eliminate the competition. With a tighter and more collaborative environment, the ability to access others, get meetings, and develop nimbly ultimately speeds up development.

## **Lower cost of operations eases financial burden**

Early-stage companies can sink when faced with many minor business costs that quickly add up. Vermont's cost of operations is minimal in comparison to major markets like New York City. Vermont — and other lesser-known employment hubs — offers competitive numbers for office space, cost of living, and average compensation.

However, Vermont, like anywhere, has room for growth. State and city leaders are actively working to improve its talent recruitment, distribution capabilities, and travel options to ensure it continues to assist its rapidly growing companies. I've found that the

areas where my company saves outweigh the areas where we spend a little more. As such, the net cost is far less when compared to major tech hubs.

## **The quality of life can be pretty superb**

Similar to company perks, location perks can have just as much of an impact on talent attraction. With a thriving outdoors scene — from dirt biking, hiking, skiing and more — there is no shortage of things to do in Vermont. In fact, the state was recently ranked the No. 3 best state to live by CNBC, which is no surprise since the state has about 13 million visitors every year.

Vermont also offers great universities with programs in science, engineering, entrepreneurship, finance, and medicine, along with top-notch medical centers. Vermont is also the safest state in the nation, reporting just 118 violent crimes per 100,000 state residents in 2015.

While many startups may find their sweet spots in major tech hubs like Silicon Valley, not all startups require the same resources and can find what they need to succeed outside of large tech hubs. For those developing early-stage technologies, finding a network that will support their ideas is critical for market penetration.

*Aaron Pollak is a serial tech entrepreneur in Vermont. He is currently the CEO of a Burlington, Vermont-based business called Venture.co, with customers in 20+ states. He develops and maintains web applications used in the non-exchange listed securities industry. Prior to cofounding Venture.co, Pollak worked at Dynapower, overseeing product development and sales.*

# Forbes

PRESENTING THE  
**FORBES 30 UNDER 30:  
MANUFACTURING &  
INDUSTRY**



## **Tyler McNaney, 25**

### **Founder, Filabot**

Tyler McNaney founded Barre, Vermont-based Filabot in 2011 and now counts NASA and Google amongst its customers. Filabot takes plastic materials and converts them into filament for use in 3D printers. The company's machines can recycle old plastics like water bottles, washed-up beach plastics, and failed 3D prints. This enables manufacturers using 3D printing to build sustainable, closed-loop systems.

# Forbes

— PRESENTING THE —  
**FORBES 30 UNDER 30:  
MANUFACTURING &  
INDUSTRY**



## **Corinne Prevot, 26**

### **Founder, Skida Headwear & Accessories**

Skida makes ski-inspired headwear and accessories. In 2008, Vermont skier and design-enthusiast Corinne Prevot picked up fun fabric and made the first Skida hats for her Burke Mountain Academy teammates, and soon demand snowballed beyond the ski racing community. The bootstrapped company, which does all its manufacturing in Vermont, sold over 78,000 products in its past fiscal year.

**www.3ders.org**  
3D printer and 3D printing news

## 5 3D printing stars make Forbes' 30 Under 30 Manufacturing 2018 List

Nov 15, 2017 | By Julia

**Forbes**  
**30 UNDER 30**

Forbes magazine has just unveiled the next edition of its famed 30 Under 30 Manufacturing 2018 list, the crème de la crème of young entrepreneurs and makers set to transform the world of manufacturing. In what may come as no surprise to some, 5 of those headline-grabbers hail from the rapidly-expanding field of additive manufacturing. With innovations ranging from 3D printed metal to recycled plastics to custom fit eye-wear, these startup stars are game-changers in the true sense of the term, and are ready to dominate the playing field. Let's walk you through these 5 notable makers, and break down exactly what's got Forbes so excited about them.



*Fabric8Labs co-founders Jeff Herman (L) and David Pain*

You've probably heard of 3D printed metal by now. Typically relying on atomized metal powders, 3D printing metal is a fast-developing industry for manufacturers around the world, yet remains in its infancy compared to other time-tested 3D printing processes. But that's all about to change, thanks to California-based startup **Fabric8Labs** and its cofounders Jeff Herman, 29, and David Pain, 27. As two names on Forbes' 30 Under 30 Manufacturing 2018 list, Herman and Pain have developed the world's first non-thermal 3D metal printer using a patented Stereo-Electrochemical Deposition (SED) process. Eliminating the need for metal powders, vacuum chambers, and lasers, the Fabric8Labs innovation can produce objects in solid metal including Copper, Nickel, Iron, CoCr, Inconel, Stainless Steel, Silver, and Gold. And because there's no heat, SED can even print metal and plastic together in the same print — an industry first. According to the startup, it all boils down to one point: you can forget everything you knew about 3D metal printing.



*Filabot founder Tyler McNaney*

**Filabot** founder Tyler McNaney, 25, has also made the new 30 Under 30 list. As a Vermont-based startup dedicated to advancing the science of plastic extrusion for the 3D market, Filabot has been making waves in the industry since it first launched in 2012. Back then, McNaney's main claim to fame was developing a machine that could take recycled plastic waste, such as water bottles and milk cartons, and convert it into plastic filament for 3D printers, enabling a truly sustainable system for additive manufacturing. Since then, Filabot has remained committed to the environment, expanding the business with a wide roster of machines, materials, parts and accessories, and services, all based out of its state-of-the-art Vermont facility.



*Skelmet founders James Cao (L) and Rain Wang*

Also featured on the 30 Under 30 list are James Cao, 25, and Rain Wang, 28, of **Skelmet Inc**, the Massachusetts-based producers of bespoke 3D printed eyewear. Initially launching as a modest Indiegogo campaign just earlier this year, Skelmet has since taken both the fashion and tech worlds by storm with its 3D printed sunglasses, advertised as the best-fitting in the world. While the ultra-cool sunglasses themselves are nothing to sneer at, the real innovation lies in Skelmet's AI-powered process. Using a mobile device, Skelmet's app 3D scans the user's exact head and facial parameters in under 2 minutes. Then, the Boston-based intelligent design system autonomously measures, designs, and generates the perfect sunglass shape. Finally, a top-of-the-line industrial-grade SLS printer produces the ready-to-wear product. Eyeglasses and goggles are also available, although the Skelmet website warns that as popularity increases, so may wait times.

To check out the full 30 Under 30 Manufacturing and Industry 2018 list, click [here](#).



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## A David-and-Goliath Story from The Green Mountain State

Ian Wright

November 17, 2017



*(Image courtesy of the Vermont Historical Society.)*

“It’s not just maple syrup and good beer,” said George Lamphere, regarding his home state of Vermont.

Lamphere is president of [Liquid Measurement Systems \(LMS\)](#), a company that produces fuel probes for military and commercial aerospace applications using graphite composites in place of aluminum. As a result, the LMS probes are half the weight of their aluminum counterparts. They’re also designed to crumple, reducing the chance of puncturing the fuel tank in the event of a crash.



## Manufacturing in Vermont



*(Image courtesy of Liquid Measurement Systems.)*

LMS is one of more than half a dozen companies I visited on a recent trip to the Green Mountain State, and though each company was unique, they tended to share certain traits in common. For example, many of the companies are family-owned: LMS was founded a quarter century ago by Lamphere's father.

The same is true of [Vermont Precision Tools \(VPT\)](#), which produces knock-out pins, ejector pins, perforators and special punches. VPT's gage division, Vermont Gage, is the largest fixed limit gage manufacturer in the U.S., in terms of both volume and number of employees. "If it's ground and round, we did it," quipped Mike Oddy, VPT's technical resources manager.

Monica Greene, president and CEO of VPT, took over the company from her father, Norman Leduc, who co-founded VPT in 1968. Her son, Tyler, also works at VPT as a customer service representative and seems likely to carry on the family business.

There are some definite advantages to running a private, family-owned business, as Briar Alpert, president and CEO of [BioTek Instruments](#) pointed out: "We tend to think in the long-term. Our public competitors are thinking quarterly, and I think that's a huge barrier to innovation." Coincidentally, BioTek was also founded in 1968 and, like VPT, it's a second-generation family business.

## Innovation in Vermont Manufacturing



*A LazrBloc laser lens undergoes quality testing at Revision's lab. (Image courtesy of Revision Military.)*

Despite the relatively small size of Vermont's manufacturing sector—which accounts for [10.6 percent of the state's total economic output](#) and employs [10.4 of its workforce](#)—there's no shortage of innovation to be found.

Consider [Revision Military](#), which began manufacturing protective eyewear for military personnel in 2001 but has since expanded to face, head and torso protection and, most recently, personal energy storage and power management. "Lithium-ion batteries offer a tremendous tactical advantage, but they're also volatile, so we're working on how to mitigate that risk in the field," explained Greg Maguire, Revision's government affairs program manager and chief legal officer.

[Dynampower](#) is another prime example of the innovation in Vermont manufacturing. Founded in Detroit in 1963, the company moved to Burlington, VT in the early '90s. Though it began by servicing the automotive industry—ten out of the eleven auto body electroplating lines in the Rust Belt in '80s came from Dynampower—the company has pivoted and expanded several times since.

It's now a major player in the burgeoning energy storage industry, having recently launched a fully integrated energy storage system in partnership with Samsung that's a direct competitor to [Tesla's Powerpack](#). "Tesla is our biggest competitor in that segment, but they're also a customer of ours," said Dynampower president, Adam M. Knudsen, "We've been using the term 'coopetition' to describe our relationship with them."

## Manufacturing Challenges in Vermont



*(Image courtesy of Dynapower.)*

So, with all these innovative manufacturers, why is manufacturing, as Joan Goldstein, commissioner of Vermont’s Department of Economic Development described it, “the state’s best-kept secret”?

It’s a question I asked myself repeatedly over the course of my trip and, though there are no doubt a multitude of contributing factors, the answer I kept coming back to is a demographic one. Vermont is the second-least populous state, ahead of Wyoming by a margin of less than 100,000. Moreover, its population growth is essentially flat.

This poses a significant challenge for manufacturers, whether they’re looking to grow their market share or employee roster. “To be a successful company in Vermont, you need to look outside of Vermont for your customer base,” explained Alpert. That seemed to be the case for every company I visited: while many have customers within Vermont, the majority of their revenue comes from out of state.

Manufacturers in Vermont also tend to go beyond their state borders when it comes to recruiting new talent. At [2.9 percent](#), the state’s unemployment rate is significantly lower than the national average of [4.1 percent](#), but the challenge here has less to do with people than ability. This is essentially a microcosm of the impending [skills gap in manufacturing](#).

Vermonters, ever a stalwart bunch, are tackling this problem head-on. VPT, for example, has pioneered a unique training program in partnership with the non-profit [Vermont Healthcare & Information Technology Education Center \(Vermont HITEC\)](#). The eight-week course starts with basic math and works its way up to G-code and M-code programming and machine operation. Most of the students—roughly 40 have passed through the program

already—are adults looking for a career change, but VPT also encourages its managers and line supervisors to attend in order to gain a better understanding of what their subordinates actually do.

These sorts of top-down strategies for cultivating manufacturing talent can work well, but it's also possible to strengthen the sector from the ground up. That's essentially the idea behind the [Vermont Center for Emerging Technologies \(VCET\)](#), a start-up incubator that's assisted over 900 Vermonter entrepreneurs (Vermontpreneurs?). "There are three ways a state can make money," said VCET president, David Bradbury. "Real estate, finance or entrepreneurship. Vermont's population growth is flat, and we're not exactly known as a Mecca for hedge funds."

To encourage burgeoning businesses, VCET maintains three separate working spaces for, as Bradbury described them, "the hustlers, hackers and hipsters", i.e., entrepreneurs, engineers and designers. VCET is also partnered with ten colleges and universities, including the [University of Vermont](#) and [Champlain College](#). The fee for 24/7 access to VCET's working spaces is \$100 per month per person, but this is waived for undergraduate and graduate students. The approach seems to be working; the center's portfolio of start-ups includes:

- [Pwnie Express](#): IoT and cybersecurity solutions
- [Semiprobe](#): Probing and inspection equipment for semiconductors
- [Benchmark Space Systems](#): CubeSat propulsion systems

This may be the first time you've heard of these companies, but from what I saw, it won't be the last.

## Green Mountain State Manufacturing



*Church Street in Burlington, Vermont.*

Manufacturing in Vermont is very much a David-and-Goliath story. Companies from a state not well-known for its industrial prowess punch far above their weight on the global stage, whether they're making advanced scientific instruments, fixed limit gages or personal protective gear. Don't get me wrong: Vermont does have very good beer and maple syrup, but there's a lot more to it than that.

Stay tuned for more engineering tales from the Green Mountain State.

## Editor's Blog: Brewing Up Success

JANICE HOPPE-SPIERS

22 NOVEMBER 2017



*Vermont breweries are creating a lot of buzz within the state and looking to expand their reach through organic growth.*

*By Janice Hoppe-Spiers*

It is cold in Burlington, Vt., in the middle of November, but the city has a plethora of breweries to keep its residents and visitors warm. *Food & Drink International* was invited to explore the state's technology and taps scene for three days last month, visiting a number of manufacturing companies and breweries.

During our time in Vermont, we explored [Citizen Cider](#), [14th Star Brewing Co.](#) and [Zero Gravity](#). Although all three have interesting stories and unique flavors, Citizen Cider was delightfully surprising as its ciders are not overwhelmingly sweet – a nice change that I think some cideries could take a lesson from.

## Citizen Cider

Justin Heilenbach, Bryan Holmes and Kris Nelson founded Citizen Cider in 2010 and discovered their ideas about hard cider translated into some unique and interesting finished products. The trio began by pressing sweet cider in Nelson's barn and fermenting test batches of hard cider in Holmes' basement.



Today, Citizen Cider's core products that are available year-round include Unified Press, The Dirty Mayor, The Lake Hopper and Wit's Up. During our visit to the cidery in Burlington, Vt., we sampled Wit's Up, Mr. Burlington, Cori-Anderson, The American and Citizen Cellar: Tulsi.

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In 2004, Gagner's brewery went from concept to reality when the doors opened on Main Street in St. Albans, Vt. It is the only brewery in town and is located in an old bowling alley. Gagner chose the name 14th Star to mark Vermont's entry into the Union as the 14th state in 1791. Because Kentucky joined shortly thereafter, it is rare to see an American flag with 14 stars, which became the brewery's logo.

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Co-founder Matt Wilson showed us around the brewery and explained that the company prides itself on creating beers that are balanced. That balance is characterized by the logo Wilson created of a hummingbird in flight, yet suspended, with zero gravity.



## City Market/Onion River Co-op Opens South End Store

By Dave Gutknecht



PDF download of article:

 [193\\_city\\_market\\_south\\_end\\_store.pdf](#)

Vermont's City Market/Onion River Co-op, formerly a large single-store operation, will open its second location in late fall 2017. This year, City Market's downtown Burlington location generated \$42 million from 12,000 retail square feet.

The new South End facility will have 15,000 square feet of retail, plus an additional 10,000 square feet (25,000 total) on the ground floor, including a café with seating for 40. On the mezzanine there will be another 8,000 square feet for offices, teaching kitchen, community space, and lease space. Initial sales for the new store are projected at \$15 million in each of the first three years.

City Market/Onion River Co-op will complete its 45th year in 2018 and with the additional store expects to continue growing its membership of more than 12,000. The co-op received the Retail Excellence award in 2017 at the CCMA conference (as reported in Cooperative Grocer 191, July-August).

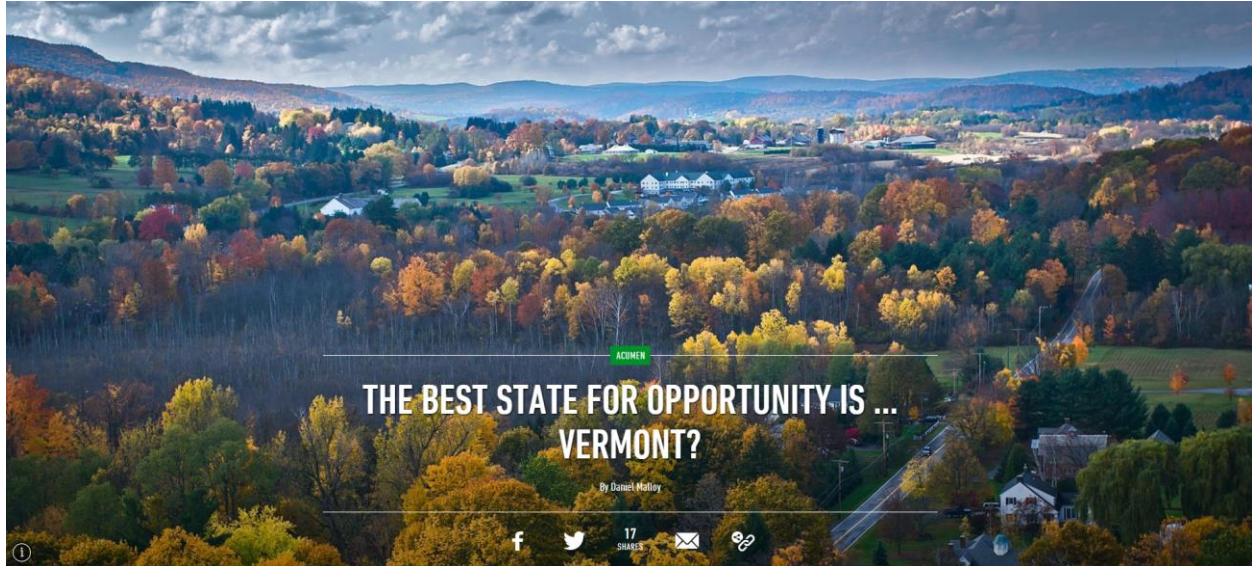
City Market staff and contractors are working hard to meet the planned mid-November opening. The co-op will add another one hundred positions to its workforce in bringing the new store to Burlington's South End, a burgeoning creative district that was all but abandoned 30 years ago. Fast forward to 2017, and the area has transformed its vacant lumberyards, auto supply shops, and military facilities into innovative makers spaces, incubators, apartment buildings, international companies, breweries, restaurants, and more.



The catalyst for this growth? Art. Burlington's South End grew almost exclusively out of the annual South End Art Hop, a three-day celebration of local art that attracts more than 30,000 people each year.

"This expansion has been in the making for a long time and is such an amazing milestone moment in our co-op's history," says John Tashiro, general manager of City Market/Onion River. "We are so deeply grateful for the incredible support and belief throughout the years of our wonderful members and board, the unbelievable dedication of our staff, and the strong partnerships with the City of Burlington, our hundreds of unbelievable farmers and vendors, and fantastic community organizations, which have all been instrumental in our evolution. Ultimately, this expansion will enable our co-ops to better serve our members, customers, and the broader community."

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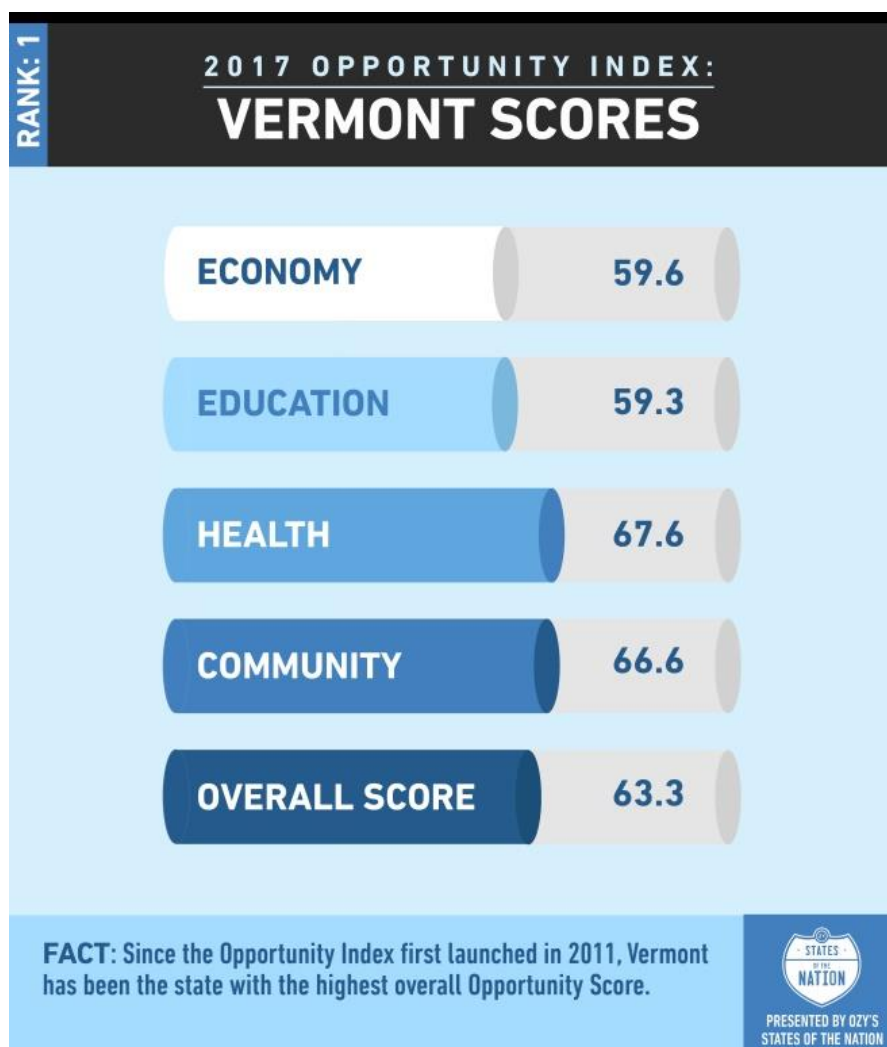
It's the land of sumptuous Ben & Jerry's ice cream, epic Phish jams, stunning ski resorts and the firebrand liberal politics of [Bernie](#) Sanders. Vermont is also the best state to be born in, all other things being equal, if you want a shot at success.

**VERMONT IS THE TOP-RANKED STATE FOR OPPORTUNITY FOR THE SEVENTH CONSECUTIVE YEAR.**

The crown comes via the 2017 Opportunity Index, published by Opportunity Nation, a bipartisan advocacy group devoted to reducing the opportunity gap and expanding economic mobility nationwide. The new [report](#), shared exclusively with OZY in advance of its release, shows opportunity advancing across the country — driven by an improving economy. But incomes and jobs, while important, do not tell the whole story of opportunity. The index is broken down into four parts: Economy, Education, Community and, new this year, Health. Within those categories, the Opportunity Index takes into account a wide variety of metrics, from access to banking services to high school graduation rates to volunteerism.

The numbers show wide gaps in opportunity across states and counties. The list begins with the Green Mountain State, with a score of 63.3 out of 100, while New Mexico sits in last place at 40.9. Across the 20 different metrics Opportunity Nation uses, the factors that most correlated with an overall opportunity score were rates of postsecondary education, incarceration and disconnected youth — the percentage of people between the ages of 16 and 24 not in school or working. Opportunity Nation's executive director, Monique Rizer, says a focus “on those life-transition

points” is critical to tackling the gaps between the possibilities for a child born in Vermont and a child born in New Mexico.



So what is it about Vermont? It doesn't have the loudest-roaring economy (that's North Dakota, thanks to an oil boom), but Vermont soars on community metrics, including its low crime rate. It also has among the best health scores in the country, which is measured by rates of health insurance, low birth weight and so-called "deaths of despair" — from suicide or substance abuse. University of Vermont provost David Rosowsky sees it in less tangible metrics. "There are other small states or accessible states or funky cool environmentally conscious states, but there's only Vermont that has this perfect size, scale and ethos," he says. Boasting a population of 625,000, Vermont is the second-smallest state — the only one with fewer people is [Wyoming](#). About a third of the population lives in the Burlington area, and pretty much the whole state is within a two-hour drive.

It's also fairly homogeneous. Rizer says a 93 percent white racial makeup and high opportunity score is no coincidence. "Diversity in the long run is great for innovation," she says. "It's what makes this country great. But in the short run, it is challenging. So

communities that don't have to deal with the complexities from a high percentage of people from different cultures and ethnic backgrounds, coming from different countries, eliminate some of the inherent challenges of forming community."

Rosowsky sees the overwhelming whiteness as a challenge to overcome, along with a relatively high cost of living and the state's "egalitarian" politics — in which small numbers of people can effectively hold up major change. [Vermont](#)'s population has actually declined slightly in recent years, and it lacks the scale and amenities to attract some major businesses. (Don't expect Amazon HQ2 to come to Stowe.) But it punches above its weight, with a strong university, health care system and startup culture in Burlington. Rosowsky points out Vermont was ahead of the curve on the locavore and organic farming movements, as environmental stewardship is a big part of its identity. "But this is truly a unique state," he adds, "and I know nobody's going to try to be like Vermont. And nobody *should* try to be like Vermont." They'll keep the opportunity title for themselves, thank you very much.

## EFFICIENT ENGINEERING



### COMMUNITY

## The Vermont Tech and Taps Tour (Part 1)

Machine Design gets a firsthand look at Vermont's growing manufacturing, technology, and brewery industries.

Jeff Kerns | Dec 12, 2017

On a recent visit to Vermont, I had the privilege of touring some of the companies that really capture the culture of the state. Small, scrappy, blue-collar companies that, like most of the world, is in need of talented people. What follows are some of my experiences on my trip into the heart of Vermont, and it underscored the fact that the state has much more to offer than snowboarding and maple syrup.

Before I even got to the hotel, the taxi driver told me that if I needed a scapegoat, I could blame the flying monkeys.



(Credit: [Chuck Stone Media](#))

For 30 years, [winged monkeys](#) that represent the ones from Oz have graced the Burlington skyline. Their numbers have grown, and stand as a reminder that this definitely isn't Kansas. Vermont has its own culture of balance. Every company I saw had a level of transparency, employee engagement, and work-life balance I haven't seen in any other companies I've visited.

## **Revision**

With seven locations and 400 employees, [Revision](#) started as an eyewear producer in 2001. The firm has expanded into other verticals; for instance, it bought a helmet company. For now, it supplies both domestic and foreign soldiers with eye protection. This is one of the reasons I don't have any pictures from inside the facility. However, when walking down one of the hallways, I spotted a pair of glasses that look like it was hit with barrage of pellets. This was proof that Revision's glasses could withstand a 12-gauge shotgun blast from 16 feet away.

This is above the normal test, which is a single pellet being launched from an air gun over 600 ft./sec. I was able to see a test, and at 659 ft./sec., there was just a dimple in the polymer. Revision tests about 2% of its products this way.



Proper molds control the thickness of the lenses, and are key to making sure optics perform well. After wearing glasses without perfect optics for long periods of time, some users have complained of headaches. Despite being able to see through the glasses fine, it might be the slightly bending light that could result in discomfort.

Molding, cutting, and marking the lenses is automated. I couldn't go into the clean room, but I could see a 4-Axis Denso SCARA robot—I'll assume the HS-G Series—was moving glasses in and out of a Plexiglas box. Kelly Krayewsky, director of marketing communication at Revision, pointed out that it was a laser marking system. The arm would pick up the cut lenses, hold them up to a laser, and then at the speed of light, make three marks. I was impressed that there was no fixture; the SCARA arm needs to have accurate repeatability to make sure the markings are consistently in the same spot for each lens.

“While the glasses are safe, it doesn't matter if they don't wear them,” said Gregory Maguire, senior director of legal government affairs. “Weight, safety, and optics are



obviously important, but people don't want to look ridiculous. If the glasses don't look cool, or intimidating, the soldiers won't wear them. So yes, a part of making the glasses safe is to make them look cool or badass to ensure the soldiers actually keep them on."



*Shown is the Stingerhawk eyewear deluxe kit from Revision. Coatings used on the glasses are important to keep the lenses from scratching or fogging. The Stingerhawk was tested under EN 166 standards. In particular, Revision's OcuMax Plus has been proven to last longer than competing anti-fog solutions by a factor of 10X-20X, is chemical-resistant, and prevents scratches, streaks, and smears.*

This idea carries on in Revision's new helmets. The company is eagerly waiting to hear if its latest Caiman helmet will be adopted by the military.

Vermont helps local companies such as Revision with the Vermont Procurement Technical Assistance Center (VT PTAC). The VT PTAC is part of a nationwide network that shares one common goal: To provide businesses with an understanding of government-contracting requirements and the know-how to obtain and successfully perform federal, state, and local contracts. VT PTAC consistently assists Vermont businesses in finding and winning over \$100 million annually in government contracts.

With easy access to politicians, government benefits, and the natural beauty that is Vermont, innovative technology companies are saying “there’s no place like home” in Burlington, Vermont. Stayed tuned for Part 2, which details my visit with BioTek—a precision equipment manufacturer for microplating, and bio-analytics.

FRESH IDEAS FOR INDUSTRY LEADERS

# food & drink

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WINTER 2017, VOLUME 2

INTERNATIONAL

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winter 2017, volume 2



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vermont tour: by janice hoppe-spiers

# Brewing up Success

Vermont breweries are creating a lot of buzz within the state and looking to expand.



It is cold in Burlington, Vt., in the middle of November, but the city has a plethora of breweries to keep its residents and visitors warm. Food & Drink International was invited to explore the state's technology and taps scene for three days last month, visiting a number of manufacturing companies and breweries.

During our time in Vermont, we explored Citizen Cider, 14th Star Brewing Co. and Zero Gravity. Although all three have interesting stories and unique flavors, Citizen Cider was delightfully surprising as its ciders are not overwhelmingly sweet – a nice change that I think some cideries could take a lesson from.

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# MachineDesign®

## EFFICIENT ENGINEERING



### INDUSTRIAL AUTOMATION

## The Vermont Tech and Taps Tour (Part 2)

Machine Design tours Vermont's growing manufacturing, technology, and brewery industries.

Jeff Kerns | Dec 21, 2017

Vermont's government is committed to building strong technology companies. It uses grants, loans, and everything else in its arsenal to help local business and attract more STEM-experienced employees who love nature and believe in a good life/work balance.

### [BioTek Instruments](#)

Gene therapy and work in seaweed are large disruptors in life sciences and petroleum industries, respectively. But normal precision equipment for microplating or bioanalytics had been running into a large barrier of entry. Addressing the problem, BioTek dramatically reduced the cost to help overcome that barrier. On top of that, the company is able to have the machine on your doorstep six weeks from the day you place your order.



“Finding the right manufacturing process was key,” said Briar Alpert, president of BioTek. “You’ll see a lot of low-tech innovation in our manufacturing process. This was all generated straight from our employees. We really don’t have a hierarchy gap. Employees on the floor have often mentioned ideas to me, and we have integrated many of them into our process. This is important because no one knows the process better than the people doing it.”

**Think Possible**



Sure enough, one employee who was into woodworking had made wooden trays with specific sections to hold parts. Simply holding the parts in an orientation saved time, and kept parts from getting lost. As we walked through the complex, other employees pointed out fixtures and widgets they made, or had made for them.

Alpert mentioned everyone has a chart of what work needs to be done. The chart isn’t a connected screen or an advanced Internet of Things network; it’s just a whiteboard.

The company is a comfortable place to work, where people just talk to one another and keep things light. This casual flow doesn’t require complex technology, so they just don’t integrate what isn’t necessary.

What really surprised me came next. Alpert mentioned that if you see some empty workstations, it’s because the employees just aren’t there. They may be out sick, or taking care of other business. If the work on the employee’s whiteboard is getting done, he said they let their professional employees figure out how to manage their time. Some

employees have kids that need rides in the middle of the day, or they may have a reason to come in late. I assumed this couldn't work for very long before finding a fault, but BioTek is about to celebrate its 50-year anniversary next year.



*The BioTek FLx800 TBI fluorometer is a multi-detection microplate reader that combines high-end specifications and performance with convenience and ease of use. The device also costs much less than traditional fluorescence-luminescence microplate readers. The FLx800 line includes several models with options that meet the specific needs of research and OEM users. Top and bottom reading are available to read anything from 6-well to 384-well microplates, and PCR plates. An optional external dispenser module makes it possible to run applications such as ion-channel assays and flash-luminescence assays.*

Finally, Alpert mentioned why he likes doing business in Vermont. He mentioned that it's a little expensive to live here, but the natural beauty alone is worth it. However, on the business side of things, there are the government benefits and easy access to politicians. One common thread running through just about every company I visited was that they mentioned how easy it is to communicate with the state government.

A company growing as fast as BioTek has sought out other opportunities, too, such as the Vermont Employment Growth Incentive (VEGI). The VEGI is a performance-based cash incentive (not a tax credit) paid to approved companies for prospective job and payroll creation in any region of the state and in almost any sector. The program requires board approval, but an incentive estimate can be provided easily and quickly.

### **Part 3 of the Tour**

The next part in this series involves tours of two companies. Liquid Measurements Systems is a company that uses material science to make a safer, lighter fuel system for planes. And Vermont Precision Tools is a diverse machine shop that claims, “if it has a hole or thread, we have a gauge for it.” If that doesn’t excite you, in part four, we start the brewery tours.



[Part 1](#) of the series looked back at my tour of Revision, a military-grade safety-glass company. It is expanding into helmets and batteries, and is proud to be a successful Vermont company. In [Part 2](#), I recounted my tour of BioTek, a company that is disrupting the life sciences by offering high-tech testing equipment at a fraction of the cost of its competition. The companies have displayed the culture of a small, scrappy, blue-collar state that, like most of the world, needs talented people.

The following is a trip into the heart of Vermont, and shows the state has much more to offer than snowboarding and maple syrup.

## **Liquid Measurement Systems**

Started in 1991, [Liquid Measurement Systems](#) (LMS) now has 43 employees working toward improving the accuracy and measurement capability in liquid measurement

systems. Specializing in fuel probes, indicators, and conditioners, the company has found advantages in material science.

The LMS composite fuel quantity probes with AC systems are made with lightweight, durable graphite composite. CEO George Lamphere said LMS's probes are the lightest ones on the market. For example, the LMS composite fuel probe weighs approximately half that of a similar metal probe. A 38-in.-long LMS composite probe now in production (with cable) weighs less than 10 ounces.



*The AC fuel probes made from this graphite composite will crush before puncturing the fuel tank. This ensures containment in a crash, or at least containment from the fuel probe.*

Beyond being lightweight, the probe is resistant to corrosion, cracking, dents, and other field maltreatments. So far, LMS has delivered over 6,200 graphite composite fuel quantity probes to the field—with no field failures—in a wide variety of commercial and military aircraft.

One of the benefits of doing business in Vermont is that “it’s the center of the universe,” said Lamphere. While Vermont might seem like it’s far north and east, it’s relatively central to LMS’s international business. Vermont is very close to a large hub in Canada; about as close as you can get to Europe while still being in the U.S. In addition, LMS has taken part in the State Trade Expansion Program Grant (STEP).

STEP was awarded to Vermont by the U.S. Small Business Administration (SBA) to support the state’s businesses in an effort to engage internationally through trade missions, trade shows, and export education. The SBA and STEP’s objective is to increase the overall number of U.S. small business exporters as well as increase export sales. The STEP program’s focus in Vermont is on relationship development and export planning—helping businesses diversify to include global markets that benefit companies and their employees.

### **Vermont Precision Tools**

The last tech part of the tour was spent at [Vermont Precision Tools](#) (VPT). CEO Monica Greene said, “If it has a hole or thread, we’ve got a gage for it.” Since 1968, Vermont Precision Tools Inc. has built its business by providing our customers with the highest-quality products and services in the industry. It prides itself on the ability to achieve total customer satisfaction while working in a business environment created of mutual respect and appreciation. VPT services multiple metalworking industries.

VPT has the same Vermont culturalism as the other companies: listening to its employees and long-term, continuous growth. Like most of the companies I saw, it is family-owned. Family-owned company executives aren’t looking at rapid expansion in order to sell out and ride off on a boat of money. They’re in it for the long haul.

In addition, the culture of transparency and treating people equally was present here, too. Employees were given praise and highlighted for accomplishing tasks, or honored

for their ideas. Greene proudly showed off a board indicating how many employee ideas the company integrated into the production floor that year—297! In fact, thousands of employee ideas have been integrated into the company since the start of this program.



*VPT manufactures a wide variety of precision round and ground products to meet today's demands for superior-performance tools, while providing quality and dependability. The company offers a full range of grinding capabilities, in-house heat treat, and state-of-the-art inspection.*

The company was growing rapidly, and VPT worked closely with government officials to find the best way to expand using the Brownfields Initiative. The Brownfields Initiative promotes the productive reuse of sites that are currently abandoned or not fully utilized due to contamination or the perception of contamination on the site. Financial assistance for cleanup provides economic growth, housing, and open space that strengthens the communities.

The Brownfields Revitalization Fund (BRF) offers grants and loans for remediation of brownfield sites with viable redevelopment potential. The fund is administered by the Agency of Commerce and Community Development, with funds made available to Vermont from the Environmental Protection Agency. Company representatives mentioned how easy it was to work with and access government officials.

VPT also has an extensive training program that was working on adding 40 students as of this writing. This helps ensure it gets the best employees, and with the growing international STEM gap, internal training is a big benefit. Training and promoting employees internally means that many of the employees at VPT, as was the case with employees for other companies I saw in Vermont, have been with these companies for many years, and maintain company loyalty. Moreover, in Vermont, 50% of the cost of training might be covered by the state.

The Vermont Training Program (VTP) is a flexible, nimble, and strategic workforce development program to enhance the skills of the Vermont workforce and increase productivity of Vermont employers. VTP leverages its grant budget to serve Vermonters across a broad range of industry sectors while putting a focus on new and innovative training projects or initiatives. VTP can fund pre-employment, new hires, and/or incumbent employee training. Up to 50% of wages for each employee in training (on-site training) or up to 50% of the trainer expenses (classroom/vendor fees) can be funded. Grants are paid out on a reimbursement basis upon completion of employee training. Costs associated with travel, materials, equipment, consulting/ coaching, and course development will not be considered.

These are just a few of the benefits featured in my tour around Vermont. There's plenty more on how these policies are helping to expand the booming brewery business in the state, which is coming in part 4. Stay tuned!



# City Market/Onion River Co-op Opens South End Store

BY DAVE GUTKNECHT

Vermont’s City Market/Onion River Co-op, formerly a large single-store operation, will open its second location in late fall 2017. This year, City Market’s downtown Burlington location generated \$42 million from 12,000 retail square feet.

The new South End facility will have 15,000 square feet of retail, plus an additional 10,000 square feet (25,000 total) on the ground floor, including a café with seating for 40. On the mezzanine there will be another 8,000 square feet for offices, teaching kitchen, community space, and lease space. Initial sales for the new store are projected at \$15 million in each of the first three years.

City Market/Onion River Co-op will complete its 45th year in 2018 and with the additional store expects to continue growing its membership of more than 12,000. The co-op received the Retail Excellence award in 2017 at the CCMA conference (as reported in *Cooperative Grocer* 191, July-August).

City Market staff and contractors are working hard to meet the planned mid-November opening. The co-op will add another one hundred positions to its workforce in bringing the new store to Burlington’s South End, a burgeoning creative district that was all but abandoned 30 years ago. Fast forward to 2017, and the area has transformed its vacant lumberyards, auto supply shops, and military facilities into innovative makers spaces, incubators, apartment buildings, international companies, breweries, restaurants, and more.

The catalyst for this growth? Art. Burlington’s South End grew almost exclusively out of the annual South End Art Hop, a three-day celebration of local art that attracts more than 30,000 people each year.

“This expansion has been in the making for a long time and is such an amazing milestone moment in our co-op’s history,” says John Tashiro, general manager of City Market/Onion River. “We are so deeply grateful for the incredible support and belief throughout the years of our wonderful members and board, the unbelievable dedication of our staff, and the strong partnerships with the City of Burlington, our hundreds of unbelievable farmers and vendors, and fantastic community organizations, which have all been instrumental in our evolution. Ultimately, this expansion will enable our co-ops to better serve our members, customers, and the broader community.” •



Mayor and manager at the site: Burlington’s mayor, Myro Weinberger (left) and City Market’s general manager, John Tashiro—*photo by John Donahue*

City Market’s new store site, Lake Champlain to the west, and downtown Burlington less than two miles away—*photo by Matt Benedetto, Vermont Aerial Photo*

## Co-op Ecosystem

Changes to the co-op ecosystem affect us all, particularly when a new store opens or a long-standing one goes out of business. What happens when a community loses a co-op? What are the effects on quality of life? Conversely, what is mobilized when a community rallies around the vision of a startup team, working together to open a new co-op? We are interested in hearing more on this topic, and invite you to share stories of loss and gain as they reflect the realities of the current situation in your retail market. Contact [admin@grocer.coop](mailto:admin@grocer.coop) or log onto CGN to share your perspective.



## EARNED MEDIA RESULTS TO DATE

Date	Outlet	Title/Topic	Impressions	Ad Equivalency	Notes
October 1, 2017	OZY.com	In Bernie's State, Can This Republican Lead on Health Care?	5,325,013	\$49,256	Gov. Phil Scott quoted throughout (4)
October 4, 2017	OZY.com	The Sharkification of Investor Pitching Spreads Outside Silicon Valley	5,325,013	\$49,256	Christine Dodson and Sascha Mayer quoted (2); Cairn Cross quoted (2)
October 5, 2017	OZY.com	Your Kid's Not Making the Olympics. Invest in a College Fund Instead	5,325,013	\$49,256	Cairn Cross quoted (2)
October 6, 2017	OZY.com	Booze Cruisin' You Can Feel Good About	5,325,013	\$49,256	Jenn Kimmich quoted (2); Mark Hegedus quoted (2); Matt Nadeau quoted (2)
October 23, 2017	VentureBeat	4 advantages small states have over big-city business hubs	9,376,541	\$86,733	Authored by Aaron Pollak
November 14, 2017	Forbes	30 Under 30 in Manufacturing & Industry: Tyler McNaney	29,759,863	\$110,111	
November 14, 2017	Forbes (2)	30 Under 30 in Manufacturing & Industry: Corinne Prevot	29,759,863	\$110,111	
November 15, 2017	3Ders	5 3D printing stars make Forbes' 30 Under 30 Manufacturing 2018 List	457,404	\$4,231	
November 17, 2017	Engineering.com	A David-and-Goliath Story from The Green Mountain State	433,255	\$4,008	George Lamphere quoted (2); Mike Oddy quoted (2); Briar Alpert quoted (2); Greg Maguire quoted (2); Adam Knudsen quoted (2)
November 22, 2017	Food & Drink International	Editor's Blog: Brewing Up Success	25,619	\$948	Citizen Cider quoted (2)
December 5, 2017	Cooperative Grocer (Print)	City Market/Onion River Co-op Opens South End Store	2,400	\$1,900	John Tashiro quoted (2)
December 6, 2017	OZY.com	The Best State for Business Opportunity is...Vermont?	5,325,013	\$49,256	Links to OZY's previous coverage that was secured by DCI
December 6, 2017	Cooperative Grocer (Online)	City Market/Onion River Co-op Opens South End Store	17,760	\$1,314	John Tashiro quoted (2)
December 12, 2017	Machine Design	The Vermont Tech and Taps Tour (Part 1)	83,009	\$3,071	Vermont in headline (2); Gregory Maguire quoted (2)
December 18, 2017	Food & Drink International (Print)	Brewing Up Success	289,043	\$34,000	Citizen Cider quoted (2)
December 21, 2017	Machine Design	The Vermont Tech and Taps Tour (Part 2)	83,009	\$3,071	Vermont in headline (2); Briar Alpert quoted (2)
December 29, 2017	Machine Design	The Vermont Tech and Taps Tour (Part 3)	83,009	\$3,071	Vermont in headline (2); George Lamphere quoted (2); Monica Greene quoted (2)
<b>TOTAL IMPRESSIONS/AD EQUIVALENCY &amp; AVERAGE SCORES</b>			<b>96,995,840</b>	<b>\$608,849</b>	