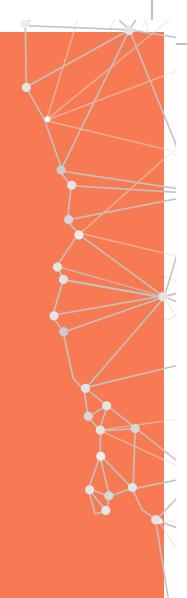


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ABOUT THIS REPORT AND OUR MOTIVATIONS

We've observed first hand the increasing role that the technology sector continues to play in creating clean, green, well paying jobs across the state. We've also observed that our tech firms have continuing -- and growing -- challenges in hiring and retaining enough qualified prospects to meet their needs for growth.

This has led to some of our fastest growing tech companies to expand outside of the state. That's a shame, as we believe it needn't be so. To fill and hold onto more of these jobs, we want to highlight tech's largely unheralded contributions to the current economy, and to outline public policy priorities that will help us all embrace the opportunities that an expanding tech economy represents.

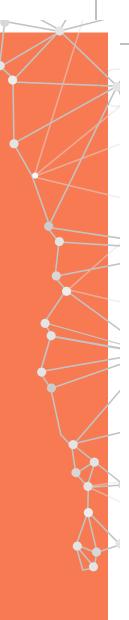
We'd like to thank the Vermont Department of Labor who, with our encouragement and support, conducted a study throughout 2015 to quantify Vermont's tech workforce and its role in the state's economy. The results of that study, recently released, can be found here:

"Tech in Vermont: A Study of the Prevalence and Impact of Tech in the Green Mountain State".



4 ABOUT THIS REPORT

This report features key findings from the Department of Labor's "Tech in Vermont" Study, which highlights the pervasive impacts that tech employment has on the broader Vermont economy.



ABOUT THE VERMONT TECHNOLOGY ALLIANCE

WHO WE ARE:

We're a non-profit business association with a mission to support, promote, and grow technology businesses and technology jobs in Vermont. Our members range from individual entrepreneurs and start-ups to some of the state's largest companies.

WHAT WE DO:

We're the only organization focused solely on Vermont's technology sector. We advocate on behalf of the industry, collaborate with government, business, non-profit and education leaders; we create opportunities for networking (such as our Lunch & Learn sessions & CEO dinners); organize technology programs and events (such as Tech Jam and our Annual Cruise); and celebrate Vermont's tech community (via our publication Tapping Tech, our website, our monthly newsletter and social media).

LEARN MORE:

Visit our website at <u>vtta.org</u>, sign up to receive our newsletter, follow us on <u>Twitter</u> and connect with us on <u>LinkedIn</u> and <u>Facebook</u>.



















Which industry employs the most Vermonters? Tourism? Agriculture? The Answer May Surprise You

TECH JOBS ARE POWERING VERMONT'S ECONOMY

More Vermonters have jobs in tech occupations and in tech industries than in any other business sector.

Vermont may be a rural state, but it has tech at its heart. While tech may not be the first to come to mind when people think about the Green Mountain state, tech businesses and jobs are at its core.

In terms of salary, education, opportunity and financial impact, tech is a powerful driver of the state's economy today, and a growth opportunity for Vermont's future.

DEFINING TECH

While Vermonters may know about some of the major tech activities in the state, from semiconductor manufacturing to software development, the reality is that tech is widely infused throughout Vermont's broader economy. Nearly every job and industry in Vermont requires some use of tech skills and tools, whether running a farm, a ski resort or a store.

So given that tech is everywhere, what do we mean by a tech job or the tech industry?

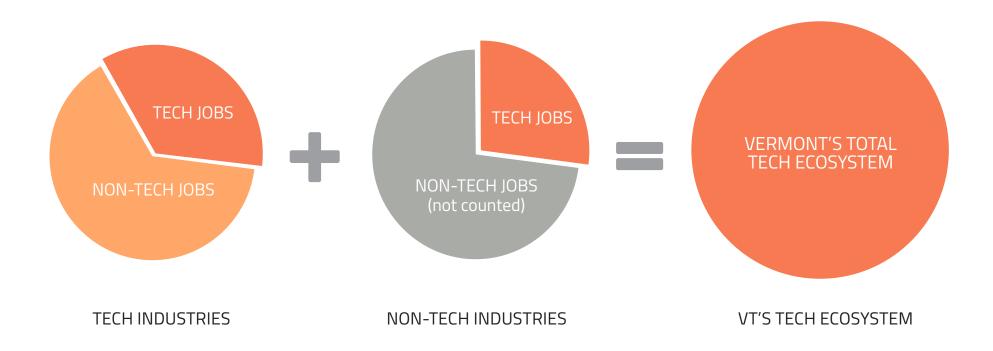
In keeping with other similar studies conducted by other states and cities, tech jobs and tech industries were defined as those that fall under the acronym known as STEM, for science, technology, engineering, and mathematics. These jobs typically require specialized education in these fields, ranging from a professional certificate to two- and four-year college degrees, up to doctorate level training. The researchers divided Vermont's tech jobs into two major categories "STEM Core," such as computer programing, and "STEM Health" for healthcare related jobs, including bioscience technology.

See the Department of Labor's study for a further discussion of the study's methodology.

10 DEFINING TECH

VERMONT'S TECH JOB ECOSYSTEM INCLUDES

(Not to scale)



DEFINING TECH 11

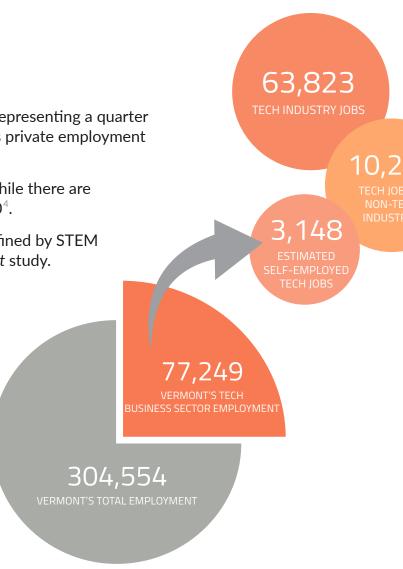
OF ALL VERMONT EMPLOYMENT takes the form of tech jobs

Vermont's tech business sector generates a total of 77,249 jobs representing a quarter of Vermont's total employment of 304,554 and 30% of Vermont's private employment of 251,528, based on 2014 data¹.

In comparison, Vermont's dairy industry employs about 7,000², while there are about 12,000 farm operators³ and tourism employs about 35,000⁴.

About 40% of the jobs in the tech industry are in occupations defined by STEM Core (such as engineering and IT) according to the Tech in Vermont study.

Approximately 8% of tech occupations in Vermont are self-employed, with the fastest growth occurring in STEM core jobs. The tech occupation with the most self-employed workers is web development, which has grown 23.8% since 2012.



12 TECH EMPLOYMENT In those places that are well served by internet and cell phone coverage, Vermont is well positioned to be an appealing place for tech startups, freelance software developers and, more broadly, skilled distance workers. If you can work from anywhere, why not Vermont?

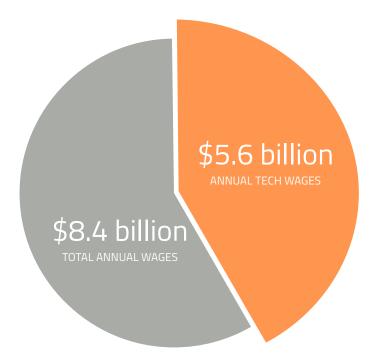


THE ANNUAL WAGES VERMONT TECH JOBS GENERATE

representing about 40% of all Vermont wages

Given that Vermont has 77,249 tech jobs with an average annual wage of \$72,732, this generates an estimated \$5.6 Billion in annual wages throughout the Vermont economy. This represents a substantial share of Vermont's approximately \$14 billion in total wages.

Even when looking at only the 25,789 STEM Core jobs within the tech industry with an average wage of \$72,482, the estimated wage contribution is still substantial at roughly \$1.9 Billion.



\$14 BILLION IN TOTAL
ANNUAL VERMONT WAGES

Tech is pervasive; it is embedded in every other aspect of the economy. No other sector makes such a large contribution.



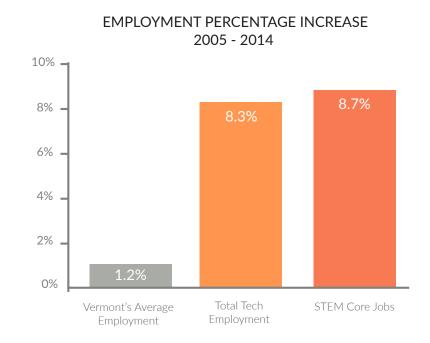
GROWTH IN TECH JOBS

compared to growth in all Vermont employment

Total Tech employment in Vermont increased 8.3% from 2005 to 2014. In comparison, Vermont's average employment grew only 1.2% for the same period.

This represents an increase in 7,879 STEM-based jobs, with STEM Core jobs growing at an even faster rate of 8.7%.

In terms of average annual increases in employment, tech jobs increased 0.9% each year compared with 0.1% for all Vermont employment.



16 TECH EMPLOYMENT

Tech jobs are the fastest growing jobs in Vermont, and total tech employment is projected to grow at a 7.5% annual rate from 2014 to 2022.



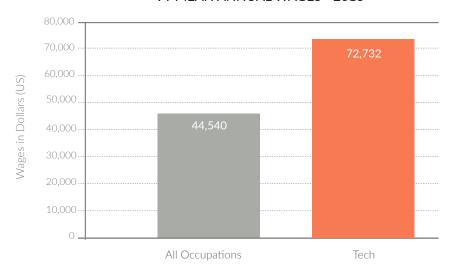
HOW MUCH MORE TECH WORKERS EARN

A Vermont tech job pays an average annual wage of \$72,732, while the average annual Vermont wage is \$44,540, which means that Vermonters in tech jobs make 63.3% more than the annual state average. The Tech in Vermont study concluded that the wage premium for all tech occupations is \$28,192 per person.

As part of this total, the average annual wage for STEM Health jobs is \$72,941, while STEM Core jobs have an annual wage of \$72,482.

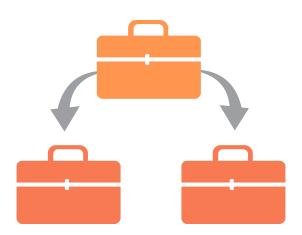
This higher average wage paid to tech jobs generates additional capital and spending throughout the broader Vermont economy.

VT MEAN ANNUAL WAGES - 2013



Tech jobs support the Vermont economy by contributing up to two and half times more in state income taxes than the average Vermont wage earner, based on single filer data.

THE MULTIPLIER EFFECT that tech employment has on the greater economy



Each tech job in Vermont creates and supports additional jobs in the economy. The Tech in Vermont study found that this job multiplier varies depending on the industry and job, ranging from 0.7 to 2.1.

For STEM Core industries that multiplier is about 2 jobs for every tech job. That means for every 1,000 of tech jobs created, an additional 2,000 jobs are created in the Vermont economy.

Other studies have found similar impacts from tech jobs in general, pegging the multiplier as high as 3 to 5 additional jobs generated. It's also worth noting that many of the nontech jobs in tech industries also pay higher than average salaries.

Many traditional Vermont businesses such as agriculture, food production and artisan crafts carry a price premium for their goods in comparison to their national and international counterparts. Tech wage premiums allow tech workers to play an important role in funding these local industries, adding an additional \$280 million to Vermont's economy and supporting approximately 4,600 jobs.

CONCLUSION

As the Tech in Vermont study shows, Vermont's tech jobs are pervasive, fast-growing, high-paying and deliver economic benefits throughout the state.

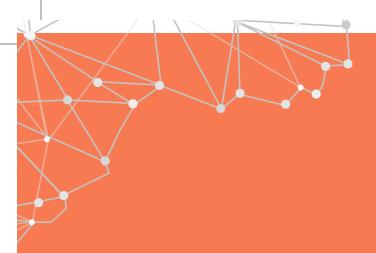
Moreover, tech businesses align with Vermont's environmental goals and working landscape, locate in downtowns and rural communities alike, and bring revenue and high paying jobs to the state. With the right attention and support, the tech sector could be even bigger.

There's no reason Vermont can't be widely celebrated as a preferred destination for technology workers and technology companies. But it will take dedicated work and action to make this vision a reality.

The businesses and jobs that fit under the technology umbrella are the sweet spot of the state's economy and represent its economic development future. Public policy needs to recognize and embrace this opportunity.

22 CONCLUSION

The opportunity to create an economy that Vermont wants — one that is clean and green, with fiscal security, good paying jobs and career opportunities for our youth — lies in encouraging and growing the tech business sector and tech jobs it creates. In fact, the Vermont economy is currently creating more jobs than we can fill with Vermonters.



PUBLIC POLICY PRIORITIES

Given that tech jobs are core to the success of Vermont's economy, it is important to ensure that our state policies and programs support tech's growth. Here are five public policy recommendations to support the continued growth of Vermont's tech ecosystem.

To capitalize on its tech opportunity:

ONE

Vermont must evolve its own brand image. A new, forward looking positioning is required, one that can hold both our natural environment and our innovative technology culture in its broader conception.

TWO

Vermont must squarely address the challenges of its problematic infrastructure. This includes prioritizing the implementation of (true) broadband internet access, improving cell phone coverage and making housing more affordable in relation to wages.

THREE

Vermont needs to **expand on its support ecosystem for entrepreneurs**. It must continue to leverage the strengths of its academic institutions while solving for significant challenges tech firms face in securing early phase / startup financing.

FOUR

To better support the workforce needs of its tech industries, Vermont needs to **actively and swiftly align its educational institutions** with the growing needs of the state's tech employers.

FIVE

The legislature needs to re-examine existing laws, modifying them in ways that support tech growth and the development of a modern economy. In so doing, Vermont must resist efforts to suppress these needed reforms.



TECH IS A STATE-WIDE OPPORTUNITY

across all counties, the tech sector is driving growth

northwest 1105 Media/ MSDN 6 Degrees Software & Consulting 89 North ASIC North, Inc. Accelerated Outsourcing Accutrace Design,LLC Adaptive Engineering, LLC Aerie Consulting Δσilion ^{vt} Albany College of Pharmacy and Health Sciences AllEarth Renewables Allscripts Alnine Weh Media American Health Care Software Appleseed Solutions Ascension Technology Corp Ask-int Tag Audio-Video Corporation Aurora North Software BLZ Services Inc BT Telecom BTV Ignite *1 BiaDiagnostics Inc. BioTek Instruments Inc. Birnamwood Games Blue Morpho Technologies LLC Bluehouse Group Bock.com v Brandthropology,Inc. Breen Systems Management Brighter Planet Burlington Bytes v C2 - Competitive Computing CMF inc. Software Solutions Cadenza Systems Caleidoscope Communications Company Catamount Research Champlain College vi ClearBearing Coldwell Banker Hickock & Boardman Realty * Comcast Business Commerce Generation Community College of Vermont Computational Geology, Inc Computer Care Control Technologies v CSL Software v Dreamlike Pictures Data Innovations North America Data Systems, Inc. Davis & Hodgdon Assoirates v DC Energy Innovations Desai Management Consulting Designbook Development Inc. DEW Construction Corp. Digital Media Creations Digitumbra Dinse, Knapp, McAndrew Direct Design ,Inc Divvi Downs Rachlin Martin vtTA Memb

Draker

Dunkiel Saunders Elliott

Raubvogel & Hand, PLLC

Dynamic Business Solutions, Inc.

ADDISON | CHITTENDEN | GRAND ISLE | FRANKLIN

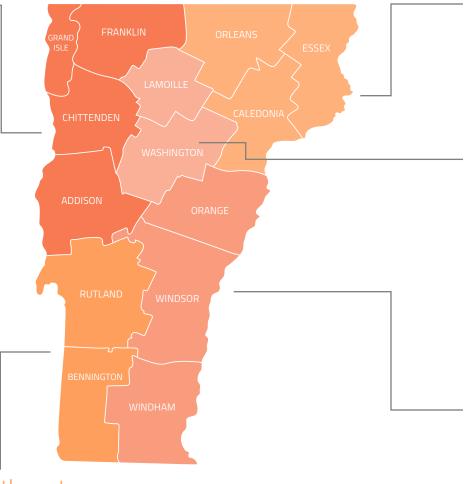
Dynapower KnowledgeWave LPA Design Fagle Network Solutions Lab Partners Associates Inc. Earthlogic Ladd Research Industries East Street Info. Ltd Lake Regional Champlain Econivel Chamber of Commerce Electronic Connection Services Lake Champlain Productions, Inc. Empower Mobility LLC Laureate Learning Systems,Inc Enhanced Designs Lee River Software LLC EpikOne, Inc. Level 3 Communications Exetechs Liquid Measurement Systems Fairpoint Little Devil Computers Communications vf Logic Supply Faraday MBA HealthGroup FirstLight Fiber MBF Bioscience Four Nine Design MED Associates Inc FreshTracks Capital MacWorks Front Porch Forum Mach 7 Technologies Manock Comprehensive GE Healthcare Design, LLC GMTS vtT/ Mantissa Technologies Corp. Galen Healthcare Solutions Matt & Erik Design Gallagher, Flynn Matthew Zucker & Company, LLP McHughston Inc Galvani Interactive Merritt & Merritt General Dynamics & Moulton Generator Inc v Michael Metz and Girl Develop It veTA Mem Associates Global Classroom MicroStrain GlobalFoundries Microdesign Consulting, Inc. Globalnet Internet Services Microprocessor Design, Inc Gorilla Web Studio Middlebury College Gouri Nair Middlebury Interactive Gravel & Shea P.C. Languages Green Mountain Antihodies Mincar Consulting Green Mountain Innovations MorphoTrust USA Green Mountain Power Moss Computer Consulting Green Mountain MyWebGrocer Software v Mylan Technologies Green Mountain Solutions N Hawley Business Solutions Greensea Systems, Inc. NEHP, Inc. Greg Hendrix NG Advantage Grenon Consulting, Inc. NPI Technology Gruber Technologies LLC Management 1 HP Enterprise Services Net Source of Vermont,Inc Haematologic Technologies, Inc. New Breed Marketing Hark Digital Newgrange IT Hazelett Strip Casting Hen House Media Newspeak Communications Henninge-Industrial Design and NextCapital Product Development Northwestern Medical Center Hesfield Enterprises,Inc Nunki, LLC v HortLabs 1 OCR Solutions Husky Injection Molding Open Tempo IPNetvoice v Original Gravity Media iMarket Solutions P&C Software Services, Inc. iTech LIS Inc Panther Internet, Inc. IT Services,LLC Patient Engagement Systems IWD Holdings * Paul Frank + Collins P.C. Infinity Software Design Perfection, LLC Inntopia Phoenix Chemistry Services Instrumart Physician's Computer Interrobang Design Collaborative, Company 1 Ion Design Pine Computers iSystems, LLC vtl Polhemus JAG Software LLC Porter Medical Center Jamison Computer Services Pragmatic Technologies IBT Production Services Precision Bioassy Prompt Incorporated Inhn Pile Propeller Media Works John Valance, Consultant Prosoft Technologies, Inc. ludith Mueller Publishers' Assistant Kilawatt Technologies Pwnie Express

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TwinState Technologies

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GE Aviation

Davis & Hodgdon Assoicates Digital Aurora, Inc. F Fnable Inc. Kalow Technologies Eight Oh Two Marketing Kaman Composites Killington Medical Clinic Ellison Surface Technologies Engineered Printing Soluti Fenner Consulting & I MW Design MacInsight Software Development In Mack Molding Maier Electronics Inc First Light Technologies NBF Architects Geoarch, Inc Novelli Engineering Global-Z Internationa Ramsay Gourd Architects Greens Screen Graphics Retail Edge High Design Creative Group

Rutland Regional Medical Center Ryan-Biggs Associates PC Southern Vermont College Southern Vermont Computer Systems Southwestern Vermont Health Care Speath Engineering Spectrum Design Stephen Maslack Architect T&M Enterprises Inc. Teconic Computer Services, Inc. Timothy D Smith & Associates NSK Steering Systems-America Tobias Gabranski Architecture Phil Tenenbaum Computer Assistance. Inc. Trinity Engineering & Tech. Services Vishay Transitor, Inc.

SOURCES

northeast caledonia | essex | orleans

BHS Composites BVT Services Cambium Group Evergreen Environmental Health & Safety Fairbanks Museum and Planetarium Fairhanks Scales Foresight Engineering Hardwick Software Integrated Technologies

Louis Garneau Lyndon State College microDATA GIS Inc. MMIC North Country Communications North Country Primary Care Northeast Computer Systems Northeast Kingdom Astronomy Foundation Northeast Kingdom Information Associates Northeastern Vermont

Regional Hospital NSA Industries Numia Medical Technology, LLC PC Med Power Shift Online Radiantec Company Inc. Solbakken Technology Partners Sterling College Stewart Structural Engineering Tata & Howard, Inc The Foundry The Kingdom Connection Thermal Storage Solutions

United Water, Inc Vermont Aerospace Manufacturing, Inc. Weidman Electrical Technologies, Inc. Wild Branch Solutions Inc

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Acute Technology Aegis Wind Akonis vtTAM Amy Kong vtTA Mer Arocordis Design vtTAM Astute Computing, LLC Barre Open Systems Instituti Bear Code LLC **Bear Pond Productions** Bill Scudder Bk's Computing Black River Design Architect Canital Connections Carter Stowell ^v CCV - Montpelier Celia Vine Marketing Central VT Medical Center Charter Communications Chris Foran V Christopher Campbell ClearChoice MD Urgent Care Concentra Urgent Care Concept Engineering

Cushman Design Group, Inc CVMC ExpressCare Dartmouth Journal Services DeWolfe Engineering Associates Diffraction, Ltd Digital Frontier uelmark Aerospace Corp Dufresne Group DYMPOL, Inc. Eastern Systems Group Freeaire Refrigeration Gifford Health Center Green Mountain Access Independent Power LLO Inntopia 1 Insights LLC Ivy Computer Inc Bover Web Design John Rosenblum Johnson State College Keurig Green Mountain Level 9 Maclay Architects Mad River Web Manufacturing Solutions Inc

Micro-CAD Designs Inc MLF Computer Services Moscow Mills Inc/Vibration Solution North National Life Group Natworks Incorporated Northern Power Systems Northern Reliability Norwich University Norwich University Applied Research Institutes Nowirz Ormsby's Computer Stor PhRMA Ram Design rb Technologies, LLC Roger Tubby Sanford/Strauss Architects SBE, Inc Shad Inc Small Dog Electronics Springer-Miller Systems Sterling Hill Productions Sterling Valley Systems, Inc. Stone Environmental Inc. Stowe – Urgent Care SunCommon

SW Consulting - FoodAgTech Solutions vt TelMedTest, LLC Tertl Studos LLC Third Branch Technologies Universal Micro Systems, Inc. Vermont Center for Geographic Information Vermont Database Corp Vermont Economic Development Authority * Vermont Information Consortium LLC Vermont Testing & Consulting Co. Vivid Technolog VT Psychiatric Care Hospita Wolnin and Associates

¹ Tech in Vermont: a Study of the Prevalence and Impact of Tech in the Green Mountain State Vermont Department of Labor: http://bit.ly/1TOsR6L

² Dairy industry report, Jan. 2015: http://bit.ly/1TkHMqF

³ Agriculture in Vermont – 2016 Highlights: http://bit.ly/21G5puV

⁴ Vermont Travel and Tourism Fact Sheet, Agency of Commerce: http://bit.ly/1XXTTJi

⁵ Bureau of Economic Analysis 2014 report: http://bit.ly/1XXU3Af

⁶ Labor Market Information, Wages and Employment 2014 Vermont Department of Labor: http://bit.ly/1WTnKBx

Vermont Technology Alliance analysis

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Concept2Rowing

Copley Hospita

AADCO Medical Accur8 Software Advanced Illuminatio Aiki Creative All-Access Infotech ,LLC American Consulting Enginee Applied Research Associates Ascendent Data Technologies,Inc Bellow Falls Urgent Care Bob Sparedeo veta Member Brattleboro Walk-in Clinic Brown Computer Solution Building Green Inc Byam Control & Measurement Co. Cartographic Technologies, Inc. CCV – Springfield centerfordigitalart.com Chroma Technology Corp. Claudio Veliz Architects PLLC ClearChoice MD Concepts NREC Divergent Technology Group, Inc. Diversified Technology Dog River Business Solutions, LLC

DuBois & King, Inc **FCFiher** GalaxyPlace Gifford Medical Center Google vtTA Member Green Mountain Digital Green River Softwar groSolar GS Precision **GW Plastics** Hawks Mountain Consulting HC Sharp Software Inc Howard Printing Inc. IGG Software Image Softworks Integrated Solar Applications Corp Ivek Corporation Key Communications Kris Johnstone LED Dynamics LineSync Architecture Ludlow Health Center Maponics Marlboro College Graduate Center Materials Management Systems Inc Maven Peal Instruments

Mondo Mediaworks Montshire Museum of Science Mountain Valley Medical Clinic Mt. Ascutney Hospital & Health Cen New Chapter, Inc. New Ground Creative Newbury Health Clinic NewsBank Inc. North Hartland Tool Corporation Northern Lights Business Omega Optical Precision Contract Manufacturing Precision Valley Communicat Pretty Code Machine LLC Ouechee Software Reinventing Energy Renaissance Digital Rockingham Medical Group ROV Technology RSG (Resource Systems Group).INC Saureus, Inc. Smith & Vinsant Architects PC Sonnax Industries SoRo Systems, Inc Sound Innovation

Spectrum Design Steven & Associates Engineering Transcend Engineering US Army Corps of Engineers ValleyNet, Inc Vermont Films Vermont Internet Marketing Consultants Vermont Manufacturing Extension Center Vermont Technical College Vtel Technologies VtSBDC WattMetrics LLC WebWerk White River Ict. Medical Center Woodward Design

Sovernet Communications

Note: This is not intended to be a complete list, just a representative sample of firms and individuals who create tech jobs in Vermont and the firms who support them.



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