REGION 2: INNOVATION ECOSYSTEM REVIEW 2019-2020

REPORT BY:
Valleys Innovation Council
January 2021

GO VIRGINIA REGION 2 OVERVIEW

Region 2 consists of the cities of Covington, Lynchburg, Radford, Roanoke, and Salem; and the counties of Alleghany, Amherst, Appomattox, Bedford, Botetourt, Campbell, Craig, Floyd, Franklin, Giles, Montgomery, Pulaski, and Roanoke.

TARGETED INDUSTRY CLUSTERS

- Manufacturing
- Life Science and Health Care
- Food & Beverage Processing
- Emerging Technology & IT

POPULATION

Total Population: 781,924

Source: U.S Census Bureau (2018)

## VIC IT and Software Talent Survey
PROJECTED GROWTH OF

112%

IT/Software Development positions from 1,125 in Q3 2019 to 2,393 by Q1 2021 in the New River and Roanoke Valleys based on a 2019 VIC survey.

Region 2 Employment and Mean Wages (3rd Quarter 2020)

IT & Software Employment

Category	Value
New River Valley	2,052
Greater Lynchburg	2,116
Blue Ridge/Roanoke	5,135
Total	9,303
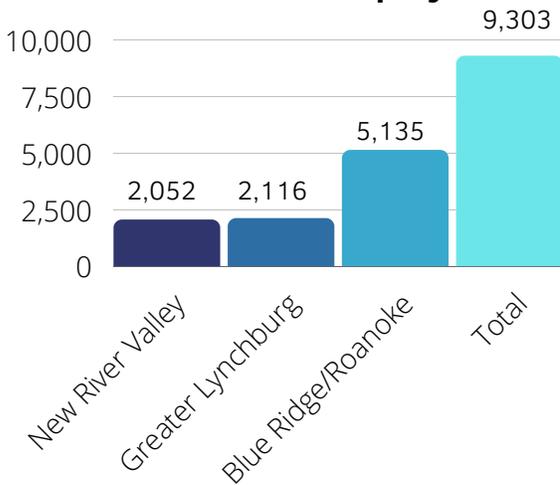
All Regional Employment

Category	Value
New River Valley	72,464
Greater Lynchburg	99,925
Blue Ridge/Roanoke	162,686
Total	335,075
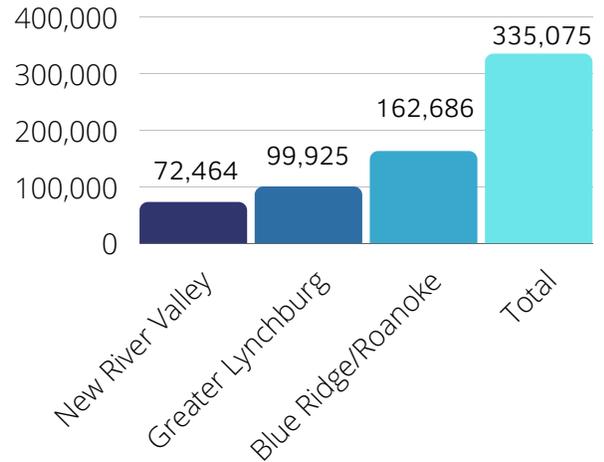
Annual Mean Wages, IT & Software Development

New River Valley:	$81,600
Blue Ridge/Roanoke Valley:	$88,100
Greater Lynchburg:	$89,400
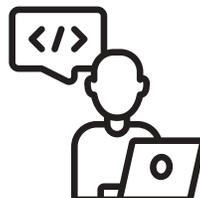
Annual Mean Wages, All Occupations

New River Valley:	$48,600
Blue Ridge/Roanoke Valley:	$47,100
Greater Lynchburg:	$46,000

Source: Virginia Employment Commission (2021)

ECOSYSTEM SPOTLIGHTS

VALLEYS INNOVATION COUNCIL

September 2020--Valleys Innovation Council (VIC) wins $982,442 in Build to Scale grant funds as part of a $2.08 million three-year project, *Growing our Innovation Ecosystem: Scaling the Success of the Regional Accelerator and Mentoring Program (RAMP),* to add pre- and post-acceleration support for regional startups, to support a new annual Health & Life Sciences RAMP cohort (beginning early 2021), and to continue VIC's work growing the regional innovation ecosystem.

Early-Stage Startup Support	Two RAMP Cohorts Each Year
Growing Our Innovation Ecosystem	
Post-Acceleration Startup Support	Research & Resource Development

Matching resources were provided by GO Virginia, Center for Innovative Technology, Virginia Tech, Roanoke-Blacksburg Technology Council, the VT Corporate Research Center, Roanoke City, Virginia Western Community College Educational Foundation.

RAMP — THE REGIONAL ACCELERATOR

Accelerator Cohort Members

2017	2018	2019	2020	2021
6	6	6	6	12!

RAMP's in-residence accelerator serves high-growth STEM-H startups in Region 2. Between 2017 and 2020, 24 companies completed the accelerator's 12-week program and now employ 76 W-2 employees and 525 contract employees. 12 new startups will be accelerated in 2021 with RAMP's recently-announced expansion to add a new winter accelerator cohort focused on the health and life sciences to complement the summer general STEM-H cohort.

The ADVANCEMENT FOUNDATION
Engineering Opportunities...

170 Entrepreneurs
REPRESENTING 111 BUSINESSES PARTICIPATED IN THE 2020 GAUNTLET PROGRAM

INNOVATION MILL HAS SUPPORTED

40 Businesses

STARTUP HOKIES — VIRGINIA TECH.

The Startup Hokies-X launched in Fall 2020 as an 8-week cohort-styled accelerator program to help student entrepreneurs build teams, engage prospective customers, and launch new business concepts with the support of between $500 and $1,500 in equity-free grants. The program runs in Fall and Spring semesters, and 10 companies graduated from the program in Fall 2020.

COgro

COgro launched in 2019 to offer early-stage startups a co-working space to support their entrepreneurial journey. Space is offered on a membership basis with complete access to a kitchen, break rooms, five conference rooms, alongside other Corporate Research Center perks.

TALENT PIPELINE

Regional STEM-H Talent Pipeline

REGION 2 STEM-H GRADUATES 2019

Degree	Graduates
Associates	768
Bachelors	6,201
Masters	3,628
Doctoral	708

Total Graduates: 11,305
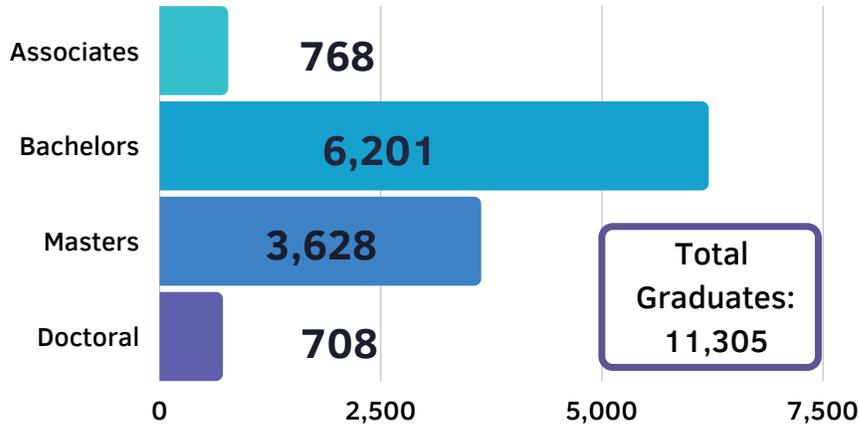
Source: The Integrated Postsecondary Education Data System (IPEDS), 2018-19. Data current as of January 2021.

HEALTH GRADUATES
6,463

SCIENCE GRADUATES
1,623

MATHEMATICS GRADUATES
284
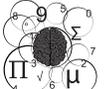
COMPUTER SCIENCE GRADUATES
725

ENGINEERING GRADUATES
2,210

Region 2 Higher Education Institutions

Doctoral-Granting Public Institutions: Radford University; Virginia Tech

Doctoral-Granting Private Institutions: Edward Via School of Osteopathic Medicine (VCOM); Liberty University; University of Lynchburg

4-Year Private Institutions: Ferrum College; Hollins University; Roanoke College; Sweet Briar College

Community Colleges: Central Virginia Community College; Dabney S. Lancaster Community College; New River Community College; Virginia Western Community College

Regional Internship Programs

Experiential Learning in Tech Employment (ELITE)

The Roanoke-Blacksburg Technology Council (RBTC) launched a new managed talent development program in 2020 to address the regional need for early-stage IT and software development talent through internships and apprenticeships. This program is supported by a GO Virginia grant.

Onward NRV Experience Internship

The NRV Experience by OnwardNRV is a seven-week-long summer curriculum designed to support employer internship programs by helping their interns grow professionally while increasing the number of young professionals living and working in the NRV post-graduation.

Get2Know Noke Summer Internship Program

This internship program sponsored by the Roanoke Regional Partnership focuses on engaging and developing regional interns to supplement the training that partner companies will provide. This program acts as a tool to retain and attract talent.

INNOVATION PIPELINE

R&D Expenditures and patents filed are assets to be leveraged and commercialized in a region's innovation pipeline. For a more in-depth exploration of the data, please visit https://www.valleysinnovation.org/innovation-dashboard

VIRGINIA TECH
RESEARCH & DEVELOPMENT EXPENDITURES (FY 2018)

$ 531.6 M

Institutional Funds	$220 M
Federal Funds	$200 M
All other sources	$112 M

$0M $50M $100M $150M $200M $250M
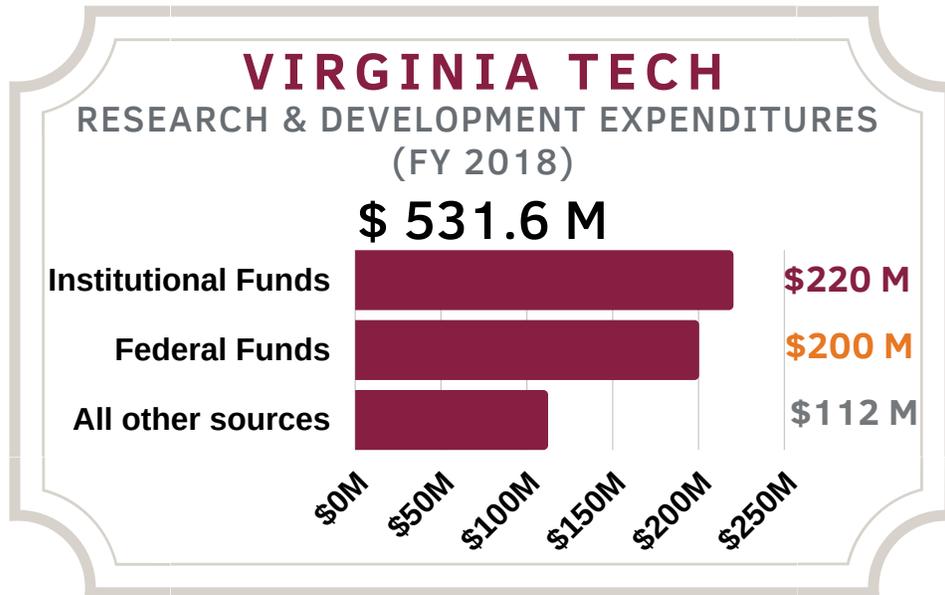
Virginia Tech's R&D expenditure in FY 2018 was $531.6M including both institutional and non-institutional sources. Compared to other research institutions in Virginia, like VCU ($246M) and UVA ($551M), Virginia Tech holds a competitive position. It is ranked 31st nationally among public institutions for all R&D expenditures and 8th for R&D expenditures in engineering.

Source: November 2019 data release by the National Science Foundation (NSF)

Fralin Biomedical Research Institute (FBRI) at VTC Expansion Opens

Fall 2020: A brand new 139,000 square-foot Biomedical Research Addition opens in downtown Roanoke at 4 Riverside Circle that will enable the rapid expansion of FBRI's research capacity with 20+ new research teams by 2027. The facility includes VT's COVID-19 testing laboratory, an active cardiovascular research lab, and the veterinary college's new Animal Cancer Care and Research Center, among others.

Patents by Region (2019)

Lynchburg MSA	16
Roanoke Valley	30
New River Valley	72

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118 PATENTS
FILED IN REGION 2 IN 2019
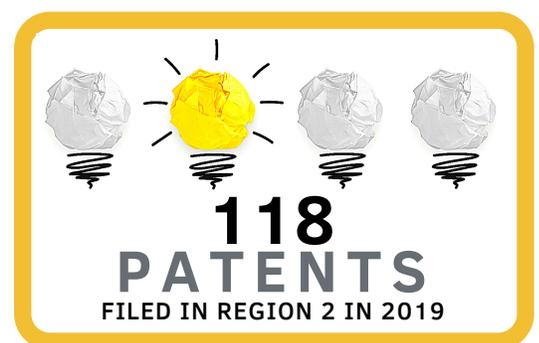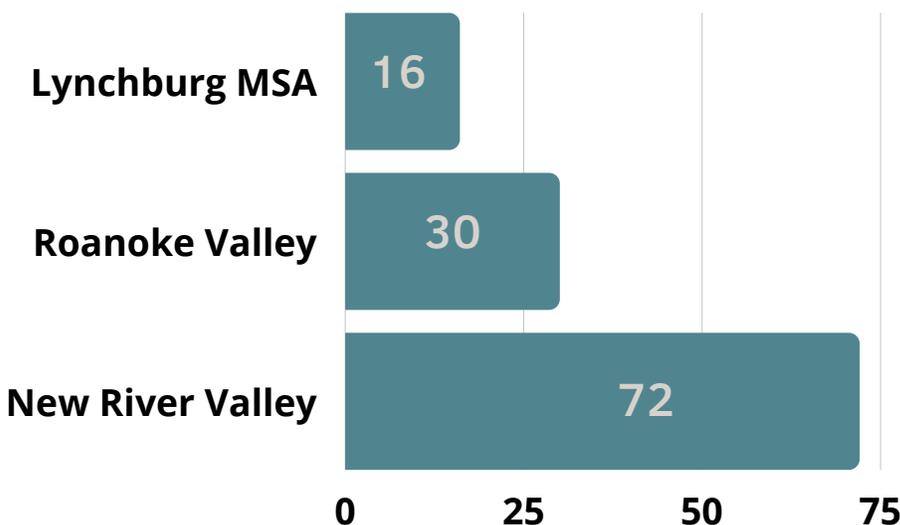
Source: U.S Patent and Trademark Office. Data current as of March 2020.

CAPITAL ECOSYSTEM

Proof of Concept Grant Funding (2020)

Both Virginia Tech and Carilion Clinic launched Proof-of-Concept (PoC) grant programs over the last year to support early-stage research and technological ideas in marketable products or services. To date, **Carilion Innovation** has awarded **7 PoC grants** to support medical device development. **Virginia Tech** has awarded **5 PoC grants** in 2020 totaling over $235,000 to support research in industries such as medical diagnostics, biotech, robotics, and environmental sustainability.

VIRGINIA TECH AWARDED

5

POC GRANTS IN 2020

CARILLION AWARDED

7

POC GRANTS IN 2020

SBIR/STTR Awards

REGION 2 COMPANIES WON

19%

OF VIRGINIA'S SBIR/STTR GRANTS AWARDED IN 2019

$21.8 M

SBIR/STTR GRANTS WON BY 11 REGION 2 COMPANIES (2019)

Venture Capital and Angel Investments (2019)

REGION 2 COMPANIES RECEIVED

$1.08 M

IN ANGEL INVESTMENTS

REGION 2 COMPANIES RECEIVED

$61.2 M

IN VENTURE CAPITAL INVESTMENTS

PANDEMIC RESPONSE

FRALIN BIOMEDICAL RESEARCH INSTITUTE AT VTC — VIRGINIA TECH

April 2020--Virginia Tech scientists develop a new COVID-19 test and secure federal and state approvals to begin processing samples at on-campus labs in Blacksburg and Roanoke. The university will support local health departments throughout the region to provide timely analysis to identify patients suspected of having COVID-19. The lab began with support from GO Virginia grant funds, and in **November 2020,** won a contract to serve as one of three OneLab Network Tier 2 laboratories in Virginia to scale up COVID-19 testing capacity through its Molecular Diagnostics Laboratory in Roanoke.

CO.STARTERS

April 2020--C0.Starters, a nine-week entrepreneur support program run by Opportunity Lynchburg, pivots to a virtual platform using Zoom due to the coronavirus pandemic. The program provides Lynchburg-area entrepreneurs with tools, resources, and relationships to turn their business idea into action.

VA30 DAY FUND

May 2020--Virginia 30 Day Fund, a nonprofit organization is created to provide small businesses in the commonwealth $3,000 forgivable loans to help with payroll, rent, preserve health care coverage for employees or other needs. The nonprofit has provided loans to more than 170 small businesses, including about 20 in the Roanoke and New River valleys.

GO VIRGINIA — VIRGINIA INITIATIVE FOR GROWTH & OPPORTUNITY IN EACH REGION

June 2020--GO Virginia redirects $14.66 M towards its new COVID-19 recovery initiative, the Economic Resilience and Recovery Program. Early Region 2 awards include $100,000 to Virginia Tech for its COVID-19 testing project and $97,200 to support RAMP's pivot to provide virtual education, mentoring, and business assistance to local companies participating in its Pitch & Polish and accelerator programming.

June 2020--Blacksburg-based GermZAPP wins The Advancement Foundation's Gauntlet competition with a device to encourage proper handwashing protocols using RFID, designated hardware, and cloud-based management, timely during the pandemic.

October 2020--A group of local software developers from the Roanoke and New River Valleys create the Localyte app to help people buy gift cards for local businesses and mitigate the costs of losing revenue during the COVID-19 pandemic.

CARES Act Locality Support for Small Businesses

More than 20 localities in Region 2 used CARES Act funding to create small business recovery grant programs that provided a total of more than **$15 million** to help businesses pivot, respond, and survive during the COVID-19 pandemic in 2020.
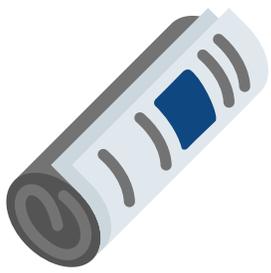
January 2020--Healthcare analytics startup, Socially Determined, which has a secondary office in the VT Corporate Research Center in Blacksburg, closes on a Series A funding round that raised a total of $11.1 million. The company plans to use the funding to further develop its flagship product, invest in top talent, and build out sales and marketing programs.

April 2020--Automated Industrial Technologies, an engineering and manufacturing firm based in Forest, started work to create a mass ventilator system prototype that could treat 50 patients at once. This project was undertaken in response to COVID-19 in order to mitigate the effects of the pandemic.

July 2020--Modea, a technology company specializing in digital strategies for healthcare organizations, will invest $100,000 to grow its operation in Montgomery County and create 20 new jobs.

July 2020--KlariVis a proprietary data analytics software platform developed by bankers for bankers raised $2.5 millions from angel investors to market a data tool to bankers. Officially launched nationally in January 2020, KlariVis solves the data conundrum in the banking industry .

August 2020--Torc Robotics announces plans to invest $8.5 million that will expand its software development operations in Montgomery County with 350 new jobs.

August 2020--A drone from Alphabet's Wing that completed the first commercial-to-home drone delivery in the US in October 2019 in Christiansburg is added to the Smithsonian's Air and Space Museum. During the pandemic, Wing expanded delivery to include several local businesses and the local library system.

December 2020--Volvo Trucks North America's plant in Pulaski County will manufacture its new battery-powered VNR Electric truck model starting early 2021. The electric truck is the outcome of the Volvo LIGHTS (Low Impact Green Heavy Transport Solutions) project, which would reduce harmful emissions.

December 2020--1901 Group is acquired by Leidos, a Reston-based firm, for $215 million. 1901 Group recently completed a 45,000 square foot building in the VT Corporate Research Center in Blacksburg anticipated to house between 600 and 700 workers.

December 2020--CloudMD Software and Services acquires majority interest in Lynchburg-based Benchmark Systems, a healthcare tech company, for $4.375 million.

ECOSYSTEM NEWS
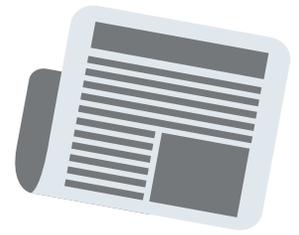
May 2020--The Center for Innovative Technology complex, is sold for $47.35 million with the proceeds dedicated to new state investments in research for a technology-driven economy. The sale will help fund innovation programs for the commonwealth and transform the way Virginia invests in higher education research and job creation in high-technology fields.

July 2020--Valleys Innovation Council, the Roanoke-Blacksburg Technology Council, and the Regional Accelerator and Mentoring Program (RAMP) announce an alliance to better connect the region's technology community and support innovation-driven entrepreneurship.

October 2020--Carilion Clinic wins a $1 million grant from the U.S Department of Agriculture (USDA) to support its Telemedicine Expansion and Optimization Project. The grant will fund virtual care centers, tele-neurology service access, and portable telehealth video devices.

November 2020--VTTI and VDOT complete the first phase of the Rural Roadway Expansion of the Virginia Smart Roads facility. The first-of-its-kind rural roadway is a 2.5-mile isolated track mimicking real-world conditions of hills, curves, and unpaved roads in the Ellett Valley region of Montgomery County

December 2020--RBTC launched the Experiential Learning In Tech Employment (ELITE) program with the support of a $290,000 GO Virginia grant. ELITE aims to bridge the regional talent gap through managed talent development opportunities to connect students and career-changing adults with smaller technology companies in Region 2 that may lack the capacity to manage an internship or apprenticeship program internally.

December 2020--VIPA, the Virginia Innovation Partnership Authority, is established to support the life cycle of innovation to create new jobs and companies in Virginia. VIPA's focus spans translational research, entrepreneurship, pre-seed and seed-stage funding, as well as acceleration, growth, and commercialization.

December 2020--Central Virginia Community College receives a grant of $400,000 from GO Virginia to assist in creating a Regional Career and Technical Education (CTE) Academy to serve colleges in Lynchburg MSA.

December 2020--GO Virginia approves a competitive grant request to help fund Virginia Bio-Connect, a $3.2 million Statewide industry cluster scale-up initiative. The project is directed by the Virginia Biotechnology Association, a multi-regional collaboration designed to increase connectivity and awareness of the existing programs, resources, and communities in the Commonwealth that support the life sciences industry.

VALLEYS INNOVATION COUNCIL

Mission

The Valleys Innovation Council supports the region by **connecting, communicating,** and **collaborating** with stakeholders to grow and strengthen our innovation economy.

Focus Areas

- Promoting Regional Innovation Assets and Successes
- Tracking the Regional Innovation Economy
- Developing and Supporting Research Commercialization Strategies

2020 Initiatives and Activities

▶ **FACILITATE--**VIC supports quarterly Innovation + Entrepreneurship coalition meetings of stakeholders in each of Region 2's subregions (New River Valley, Roanoke Valley-Alleghany Highlands, and Greater Lynchburg). The organization also supports a regional Access to Capital committee as part of its commitment to developing the regional capital ecosystem that supports high-growth startups.

▶ **TRACK--**VIC tracks and benchmarks key innovation ecosystem metrics and activities to understand the capacity of the region to support and expand the innovation economy. Using this data, VIC works to develop strategies and collaborations to improve the regional I+E ecosystem.

▶ **STRATEGIZE--**As part of its Regional Entrepreneurship Initiative (funded in part by GO Virginia), VIC is creating strategic investment plans for each of Region 2's subregions as part of a continuous planning process to support innovation-driven entrepreneurship. We are also working strategically at the regional and state levels to drive the innovation economy and encourage support for research commercialization.

▶ **BUILD CAPACITY--**VIC leads and supports grant proposals that advance regional ecosystem priorities. Successful proposals this year include:
  --**Growing our Innovation Ecosystem**: $982,442 USEDA grant to support RAMP and VIC activities
  --**Experiential Learning in Tech Employment:** $290,000 GO Virginia grant to support a new RBTC initiative that will develop the regional tech talent pipeline through managed internships and apprenticeships
  --**Pivot and RAMP Up:** $97,500 GO Virginia grant to support RAMP's pivot to provide virtual programming in light of the pandemic and to begin an Exit RAMP program for RAMP alumni

VIC Financial Supporters