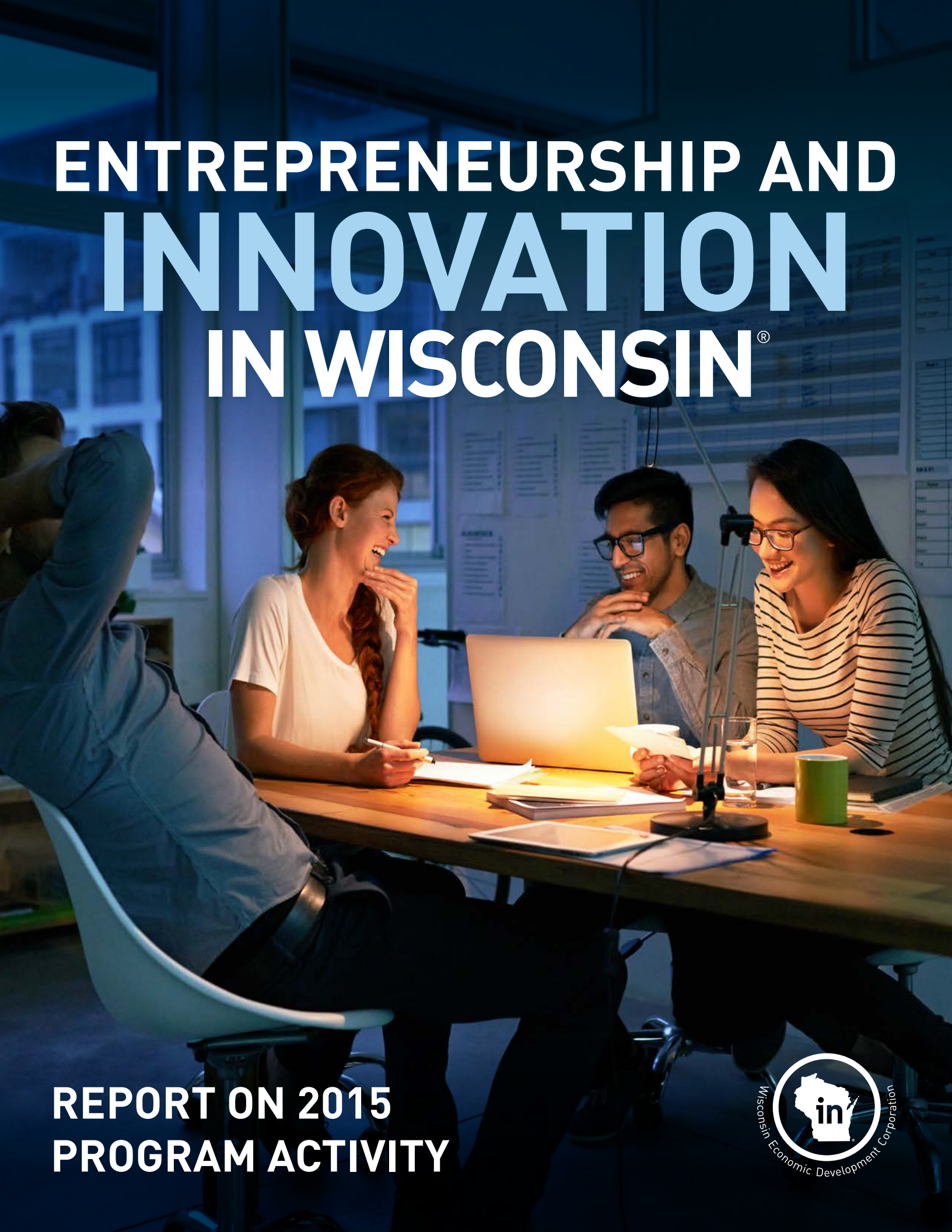
# ENTREPRENEURSHIP AND INNOVATION IN WISCONSIN®



## REPORT ON 2015 PROGRAM ACTIVITY

Wisconsin Economic Development Corporation


WHEN CURIOSITY AND PASSION
CONVERGE
GREAT THINGS CAN HAPPEN
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Wisconsin Economic Development Corporation

# SETTING THE STAGE FOR INNOVATION

Entrepreneurs and innovators play a crucial role in Wisconsin's economic success—past, present and future. Wisconsin companies that have become household names—Harley-Davidson, Kohler, SC Johnson and many more—were founded by entrepreneurs. Wisconsin also has a rich history of innovation, with pioneers who changed the world and charted new courses, like Frank Lloyd Wright, Les Paul and Harry Steenbock.

Although it may not be obvious to those not actively engaged with it, the state's entrepreneurial culture is incredibly vibrant. I am continually amazed at the ease with which a would-be entrepreneur can get connected to support to help turn an idea into a business. From pitch contests to happy hours, from accelerators to company showcases, Wisconsin's environment is rich with resources and connections for entrepreneurs.

A core part of the Wisconsin Economic Development Corporation's (WEDC's) mission is contributing to this entrepreneurial ecosystem and nurturing its future health. While there are many opinions on where scarce resources should be focused, there is little debate as to the importance of supporting entrepreneurs and the development of new ideas and technologies. This is the goal that underlies all the activities of WEDC's Division of Entrepreneurship and Innovation, which you'll find summarized in this report. We understand that when it comes to supporting startups and emerging growth companies, one size does not fit all, and we strive to constantly evolve to best support these companies in the fast-paced, competitive, and increasingly dynamic business and technology environment in which they operate.

During the 12-month period covered in this report, WEDC's direct assistance programs helped more than 300 businesses attract $195 million in new funding and generate $133 million in revenue, for a total of $328 million in capital. These companies supported 1,740 full-time jobs and 581 part-time jobs in Wisconsin and paid over $94 million in wages. In addition, WEDC's partners in administering entrepreneurship-related programs assisted nearly 2,200 companies to create more than 380 new jobs and retain an additional 440-plus jobs.

In recent years, WEDC has worked to align its metrics to better capture the impact of our support for entrepreneurship, and the inclusion of results for pass-through programs administered by partners is an important step that helps us better capture what is happening outside our sphere of direct influence. However, those reading this report should keep in mind that the aggregate impact of a healthy startup ecosystem reaches far beyond the companies WEDC is involved with either directly or indirectly. It is impossible to capture the full impact because the whole is greater than the sum of the parts. Nevertheless, we are committed to continuous improvement, and evaluation is essential for an agency like WEDC, which is funded with public resources. We are pleased to present you with this report highlighting the impact of WEDC's entrepreneurship and innovation programs during the past year. We are proud of both the individual companies and the broader ecosystem these numbers represent, and with this report, we reaffirm our commitment to their success.

Sincerely,

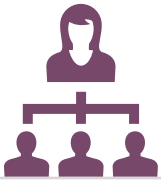
Aaron Hagar
Vice President,
Entrepreneurship and Innovation

> "WEDC is committed to providing key services and resources aimed at cultivating and nurturing entrepreneurs, which increases the positive economic and social impact for Wisconsin."
>
> — Mark R. Hogan
> Secretary and CEO

# ENTREPRENEURS BENEFIT FROM A BROAD SPECTRUM OF SUPPORT

WEDC recognizes that the needs of a young couple starting a bakery are not the same as those of a startup working to commercialize a discovery from a university research lab. In light of the diversity of companies that fall under the umbrella of the term "startup," WEDC and its partners offer an equally diverse system of resources to address the needs of these companies. This universe includes business planning assistance, loans, angel and venture funding, market research and customer development, technology and product research and development, prototyping, working capital, mentoring, startup space, legal services, seed funding, structured accelerator programs and other common needs. WEDC focuses its entrepreneurship resources into three broad categories:

assisting high-growth technology-based startups to attract the funding required to grow and scale



supporting organizations and events that create connections and relationships that build a strong startup culture

establishing a suite of broadly available technical and financial resources delivered by local or industry/ mission-based partners

A key component of WEDC's startup assistance programs is its reliance on strong partners in economic development, academia and elsewhere to assist entrepreneurs and deliver business development and financial resources at the local level. WEDC also relies on strong networks to steer companies with more complex needs to the specialized resources required to move their ideas forward. Through its partners, WEDC is able to better deliver assistance that scales to meet the needs of businesses in all corners of Wisconsin.

# A CONTINUUM OF RESOURCES FOR EVERY STAGE OF GROWTH

Though rewarding, starting a business is difficult, and success does not occur in a vacuum. Through concentrated effort and collaboration, Wisconsin has created an environment that contains all the ingredients necessary to turn brilliant ideas from abstract concepts into thriving businesses with products, customers and revenue.

The remainder of this report illustrates, program by program, how these resources target specific needs of young companies. The Qualified New Business Venture Program (page 6) helps startups raise the capital they need to grow by offering tax credits to investors. The Technology Development Loan Program (page 8) assists companies with high-tech or innovative solutions that have national or global market potential. The Seed Accelerator Program (page 12) helps support entrepreneurial training programs throughout the state. The Capital Catalyst Program (page 14) make seed grants available to organizations or communities, which in turn make grants or loans to, or investments in, early-stage and innovative small businesses that operate in their region. The Entrepreneurial Micro-grants Program (page 18) helps companies engage the services of a qualified provider to develop competitive proposals for federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants. The SBIR Advance Program (page 16) aims to fill critical funding gaps for activities that are restricted under these federal grant awards, such as market research, customer validation, patent development, business model development, and regulatory assessment. Through its partnerships (page 19), WEDC engages organizations that are well connected in entrepreneurial communities to help better target resources to the populations they are intended to help.

Together, these programs cover a broad range of needs for young companies. WEDC is committed to keeping its finger on the pulse of what the state's entrepreneurs need and adapting its offerings accordingly. In the new fiscal year, an entrepreneurial support grant program will be pilot tested with a goal of better serving companies outside of the state's two largest metro areas.

In addition, this report profiles four young companies that exemplify the spirit of innovation in Wisconsin. High-profile headlines about multi-million-dollar deals only capture a tiny fragment of entrepreneurial success. Startups are an engine for job growth, with the majority coming from smaller companies that are in many cases the unsung heroes of economic growth. The handful of companies featured here represent thousands of companies that are creating jobs and driving growth across the state.

Wisconsin ranks in the top 10 among states for 10-year business survivorship, indicating that Wisconsin startups have a better-than-average chance of being in it for the long haul. Starting a new business always involves risk, but that business has a greater chance of success if it's started in Wisconsin—an indicator of the strength of the startup ecosystem and the state's support for entrepreneurship.

**NOTE: Due to the different conventions used in reports required for the various programs, data for the SBIR/STTR Matching Grant and Entrepreneurial Micro-grant Programs is given on a fiscal year basis; data for all other programs is given on a calendar year basis.**

TOTAL FULL-TIME JOBS*

**1,740**

TOTAL PART-TIME JOBS*

**581**

TOTAL BUSINESSES ASSISTED*

**302**

TOTAL WEDC AWARD FUNDS*

**$27.3M**

TOTAL IMPACT OF PROGRAMS*

**$328M**

**Totals represent the impact of the four WEDC programs combined:**

Qualified New Business Venture Program
Technology Development Loan Program
Seed Accelerator Program
Capital Catalyst Program

# QUALIFIED NEW BUSINESS VENTURE CONNECTS STARTUPS WITH CAPITAL

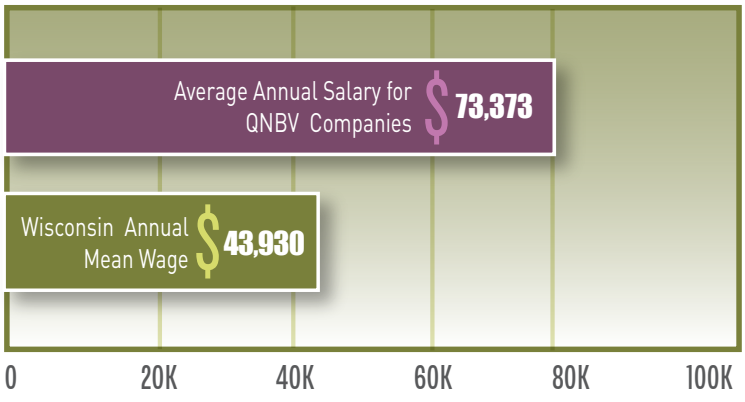
By helping startups get access to the capital necessary for growth, WEDC's Qualified New Business Venture (QNBV) Program contributes to a thriving startup ecosystem in Wisconsin. By offering tax credits for investments made in QNBV-certified companies, the program supports innovation and the commercialization of next-generation discoveries in areas including biotech, health technology, information technology, manufacturing, energy and beyond.

As the numbers in this report show, the companies represented in the QNBV pool are responsible for creating high-paying, high-skill jobs throughout Wisconsin. This program helps to close a critical gap in their development so they can finish their research, launch their products and become profitable to grow further.

The QNBV Program is only one of a wide variety of resources and programs available to startups in Wisconsin through WEDC and its partners. WEDC is committed to nurturing a vibrant startup ecosystem so ideas born in Wisconsin can make their mark on the world, improving the lives of future generations.

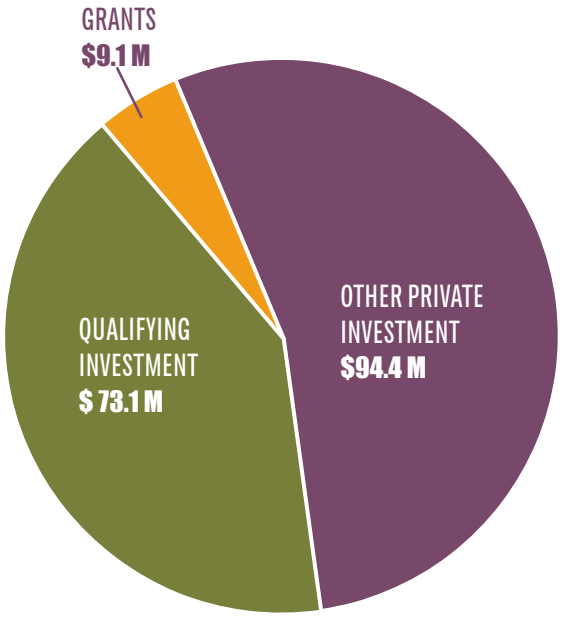
One important aspect to keep in mind with these results is that the long-term impact of the program is greater than the numbers presented in this report. Notably, the jobs data reported does not reflect the full downstream employment impact. Once companies exit the program, they do not provide reporting data and in essence "take the jobs with them" from a reporting perspective. The measure of "net new jobs" captures the job growth from companies currently active in the program. Total employment, on the other hand, is affected by the companies that leave the program (typically larger and more mature companies)—a measure of success, since the ultimate goal of the program is to help companies become established enough that they can "graduate."

## 2015 AVERAGE FULL-TIME SALARY BASE OF QNBV-CERTIFIED COMPANIES




Source: May 2015 State Occupational Employment and Wage Estimates Wisconsin (All Occupations)

## FUNDING RECEIVED BY QNBV CERTIFIED COMPANIES




## 2015 QNBV SUMMARY

### TOTAL INVESTMENTS MADE IN PARTICIPATING COMPANIES

**$176.6M**

Total funding received by certified companies including qualifying investments, other private investments and grant funding

### TOTAL CREDITS ISSUED

**$18.3M**

Total tax credits provided in 2015 for investments in certified businesses

### NEW QNBV CERTIFICATIONS IN 2015

**30**

## ANNUAL RESULTS

| YEAR | ANGEL | EARLY-STAGE INVESTMENTS | TOTAL CREDITS | OTHER FINANCING | GRANTS | TOTAL |
|---|---|---|---|---|---|---|
| 2015 | $49,437,940 | $23,690,405 | $18,282,087 | $94,382,685 | $9,064,800 | **$176,575,830** |
| 2014 | $27,902,165 | $22,642,644 | $12,433,852 | $87,211,420 | $53,042,706 | **$190,798,935** |
| 2013 | $24,099,020 | $11,211,212 | $8,827,558 | $60,891,701 | $24,315,133 | **$120,517,066** |
| 2012 | $32,834,480 | $15,229,992 | $12,016,118 | $116,254,652 | $37,177,266 | **$201,436,390** |
| 2011 | $26,802,916 | $18,486,944 | $11,322,465 | $72,498,556 | $33,155,828 | **$150,944,244** |
| 2010 | $20,160,566 | $10,267,268 | $7,606,959 | $144,561,009 | $29,400,466 | **$204,389,309** |
| 2009 | $22,116,868 | $12,902,148 | $8,754,754 | $61,487,213 | $8,141,039 | **$104,647,268** |
| 2008 | $12,423,716 | $17,137,844 | $7,390,390 | $68,116,873 | $5,358,571 | **$103,037,004** |
| 2007 | $8,201,848 | $10,400,808 | $4,650,664 | $51,573,820 | N/A | **$70,176,476** |
| 2006 | $9,672,712 | $5,693,752 | $3,841,616 | $28,933,536 | N/A | **$44,300,000** |

## ANNUAL EMPLOYMENT AND WAGES

| YEAR | CERTIFIED COMPANIES | NET NEW WI JOBS | WI FULL-TIME JOBS | WI PART-TIME JOBS | TOTAL JOBS (INCLUDING OUTSIDE WI) | FULL-TIME AVERAGE SALARY |
|---|---|---|---|---|---|---|
| 2015 | 180 | 182 | 1107 | 312 | 1,603 | $73,373 |
| 2014 | 178 | 208 | 1111 | 228 | 1,504 | $72,610 |
| 2013 | 180 | 106 | 1074 | 247 | 1,486 | $71,149 |
| 2012 | 160 | 210 | 1,102 | 220 | 1,488 | $76,581 |
| 2011 | 138 | 207 | 934 | 181 | 1,206 | $76,564 |
| 2010 | 125 | N/A | N/A | N/A | 1,107 | $83,346 |
| 2009 | 106 | N/A | N/A | N/A | 846 | $76,627 |
| 2008 | 89 | N/A | N/A | N/A | 655 | $78,582 |
| 2007 | 76 | N/A | N/A | N/A | 461 | N/A |
| 2006 | 60 | N/A | N/A | N/A | 384 | N/A |

## BREAKDOWN BY INDUSTRY

| TYPE OF INDUSTRY | TOTAL PARTICIPATING BUSINESSES | TOTAL BUSINESSES THAT RECEIVED CREDITS | QUALIFIED INVESTMENT | OTHER FINANCING | GRANTS |
|---|---|---|---|---|---|
| Biotech | 46 | 17 | $16,667,877 | $20,105,324 | $4,127,951 |
| Health Technology | 34 | 16 | $12,476,705 | $10,005,651 | $1,687,280 |
| Information Technology | 62 | 35 | $30,624,584 | $46,396,957 | $2,835,190 |
| Manufactured Products | 24 | 13 | $9,324,831 | $14,651,403 | $414,379 |
| Energy | 5 | 1 | $21,000 | $954,550 | _ |
| Other | 9 | 2 | $4,073,348 | $2,366,000 | – |
| **Total** | **180** | **84** | **$73,128,345** | **$94,382,685** | **$9,064,800** |

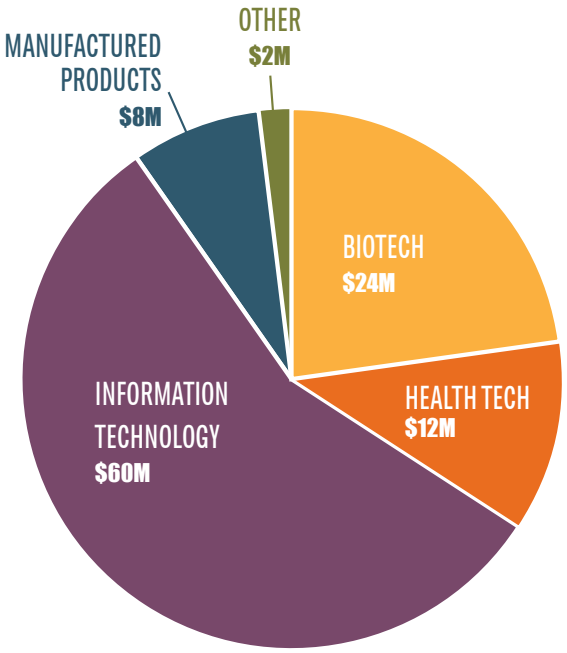
# TECHNOLOGY DEVELOPMENT LOANS PROVIDE FUNDS TO BRING IDEAS TO LIFE

Entrepreneurs often have no choice but to get creative when it comes to financing their new ventures. Recognizing that new ideas are the future of economic growth, WEDC offers lending options targeting the critical stages of new business development. WEDC's loan funds are tailored to help innovative companies with promising economic futures clear the hurdles associated with bringing new technologies, products and concepts to market.

Companies that provide high-tech or innovative solutions with national or global market potential may be eligible for Technology Development Loans, which are tailored to the evolving needs businesses face as they move through product/process development, commercial launch and rapid expansion.

Loans in this program typically range between $100,000 and $750,000 and are required to be part of a larger funding round. Among the criteria WEDC uses to make investment decisions are financial need, private investment leverage, management team experience, the potential to increase production, and the potential for long-term, positive economic impact in Wisconsin.

## PRIVATE INVESTMENT IN TDL COMPANIES BY INDUSTRY




COMPANIES ACTIVE IN THE PROGRAM

**92**

NUMBER OF OPEN LOANS

**113**

FULL-TIME EMPLOYEES

**719**

PART-TIME EMPLOYEES

**143**

AVERAGE SALARY

**$76,488**

FUNDS RAISED IN 2015

**$106.5M**

GRANTS RECEIVED BY PARTICIPATING COMPANIES

**$6.7M**

REVENUE GENERATED BY PARTICIPATING COMPANIES

**$56.2M**

**15** LOANS CONTRACTED IN 2015 FOR A TOTAL OF **$4.8M**

## TDL PORTFOLIO

| INDUSTRY | PARTICIPATING BUSINESSES | NUMBER OF LOANS | 2015 INVESTMENT | 2015 REVENUE | TOTAL EMPLOYEES | AVG SALARY |
|---|---|---|---|---|---|---|
| Biotech | 27 | 38 | $24,076,260 | $18,590,224 | 239 | **$86,600** |
| HealthTech | 20 | 23 | $11,776,976 | $3,360,434 | 110 | **$94,219** |
| Information Tech | 23 | 27 | $60,160,881 | $22,359,938 | 437 | **$65,790** |
| Manufactured Products | 16 | 17 | $7,983,836 | $4,476,235 | 102 | **$71,844** |
| Energy | 2 | 2 | $- | $4,632,315 | 23 | **$78,814** |
| Other | 4 | 6 | $2,458,113 | $2,772,182 | 38 | **$86,362** |
| **TOTAL** | **92** | **113** | **$106,456,066** | **$56,191,328** | **949** | **$76,488** |

# A TOOLKIT TO HELP PROMISING STARTUPS SURVIVE AND THRIVE

In addition to the many programs supported through partners, WEDC administers two programs directly: QNBV and TDL. Together, these two programs help young companies get the funding they need to support them through the crucial steps of commercializing an idea or discovery, from initial concept through development, validation, initial launch, and scaling up.

The QNBV and TDL programs work hand in hand, and many companies take advantage of both: there is significant overlap between the QNBV and TDL portfolios. Because of this overlap, looking at the two programs as a single portfolio provides a more complete picture of how these programs benefit high-tech startup activity in Wisconsin.

The entire portfolio of QNBV and TDL companies is viewable online at the Innovation Investment Portfolio page at **InWisconsin.com/entrepreneurs/innovation-investment-portfolio/**

The portfolio, which allows prospective investors to easily learn about opportunities in Wisconsin, showcases the broad range of types of companies that benefit from these programs: the list includes companies from sectors including aviation and aerospace; bioscience and medical devices; energy, power and control; food and beverage; information technology; manufacturing; and water technology.

## 2015 QNBV-TDL PORTFOLIO

| | |
|---|---|
| **Companies** | **199** |
| **Full-Time Employees** | **1,143** |
| **Part-Time Employees** | **315** |
| **Non-Wisconsin Employees** | **189** |
| **Average Salary** | **$73,476** |
| **Full-Time Wages (estimated)** | **$83,983,068** |
| **Funds Raised (estimated)** | **$177,192,543** |
| **Grants** | **$10,217,239** |

THE PORTFOLIO OF THE TWO PROGRAMS TOGETHER HAS

**199**

COMPANIES

TOGETHER, THE QNBV AND TDL PROGRAMS SUPPORT MORE THAN

**1,100**

FULL-TIME EMPLOYEES

THAT PAY APPROXIMATELY

**$84M**

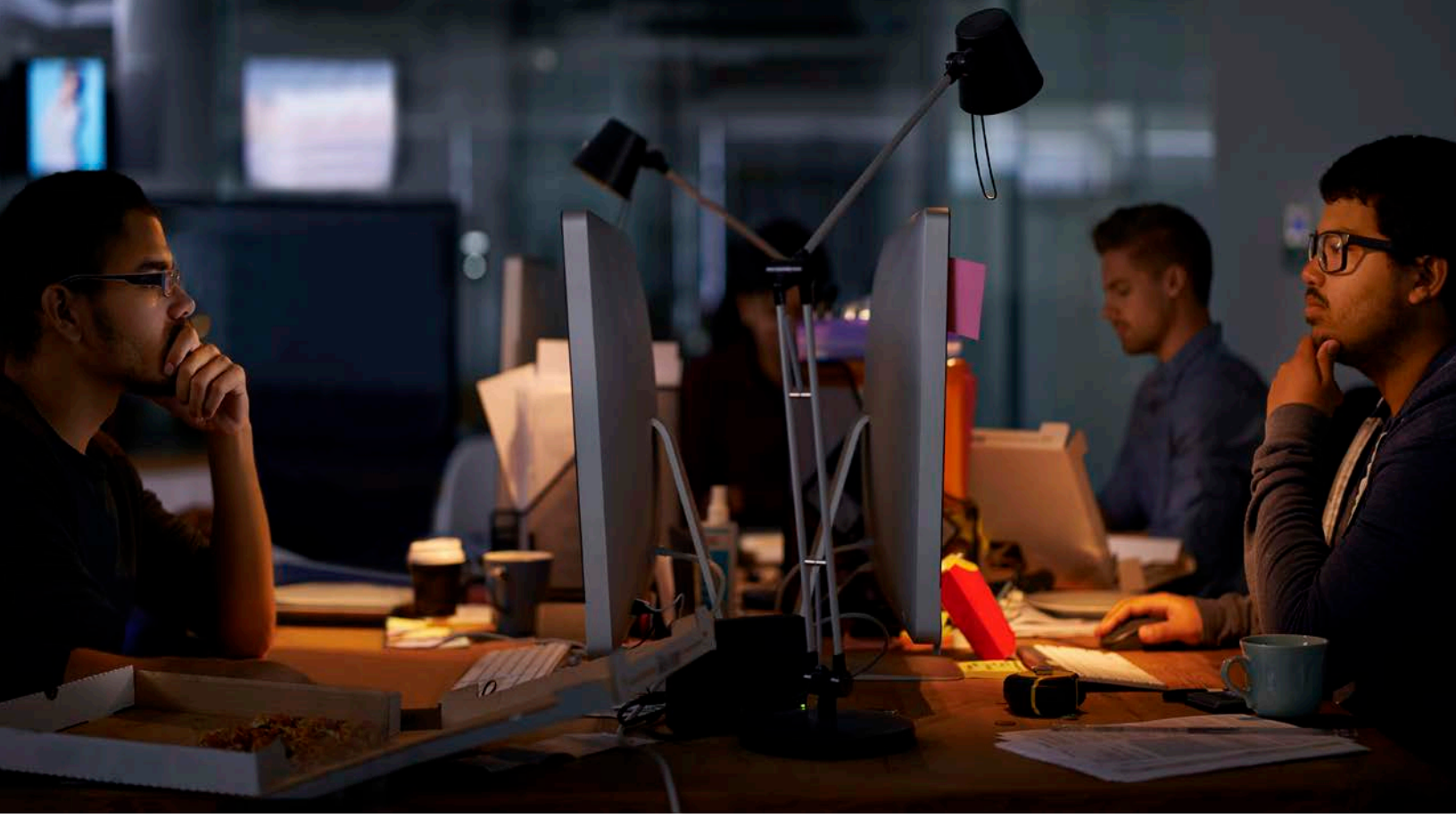
IN WAGES TO FULL-TIME EMPLOYEES

**$259M**

NEW FUNDING + REVENUE

WITH AN AVERAGE ANNUAL SALARY OF OVER

**$73K**



TOTAL FUNDING RECEIVED BY QNBV COMPANIES SINCE INCEPTION

**$1.7 BILLION**

COMPANIES ASSISTED SINCE QNBV INCEPTION

**328**

CUMULATIVE TOTAL OF QNBV QUALIFIED INVESTMENT SINCE INCEPTION (2005-2015)

**$392M**

## QNBV-TDL PORTFOLIO

| INDUSTRY | COMPANIES | NUMBER OF LOANS | QNBV CERTIFIED COMPANIES | GRANTS | $CREDITS | FUNDS RAISED | REVENUE | TOTAL EMPLOYEE | AVG FT SALARY |
|---|---|---|---|---|---|---|---|---|---|
| Biotech | 52 | 38 | 46 | $5,127,951 | $4,166,986 | **$41,472,712** | $21,769,144 | 363 | $88,413 |
| HealthTech | 37 | 23 | 34 | $1,839,719 | $3,119,176 | **$24,407,074** | $5,825,178 | 169 | $85,032 |
| Info Tech | 63 | 27 | 62 | $2,835,190 | $7,656,146 | **$79,831,731** | $31,602,942 | 789 | $67,083 |
| Mnfg. Prod. | 32 | 17 | 24 | $414,379 | $2,331,208 | **$24,912,363** | $13,071,503 | 213 | $66,802 |
| Energy | 6 | 2 | 5 | $- | $5,250 | **$975,550** | $6,549,769 | 42 | $93,925 |
| Other | 9 | 6 | 9 | - | $1,003,337 | **$5,593,113** | $3,128,698 | 71 | $59,700 |
| **TOTAL** | 199 | 113 | 180 | $10,217,239 | $18,282,103 | **$177,192,543** | $81,947,234 | 1647 | $73,476 |

# SEED ACCELERATOR PROGRAM HELPS DEVELOP ENTREPRENEURIAL SKILLS

When it comes to being a successful entrepreneur, having a great idea backed by limitless drive is only half the battle. To have any chance of becoming commercially viable, today's startups also have to focus on customer development, technology validation, product design and testing, market analysis and financial management. It's not easy, and only the fittest survive.

WEDC's Seed Accelerator Program helps provide the kind of support that gives startups in Wisconsin a better chance of achieving long-term success. It does so by providing matching grants to organizations that provide participating entrepreneurs with common amenities including business model training, small amounts of financing, experienced mentorship, visibility to investors and other resources.

With grants offered through the Seed Accelerator Program, WEDC empowers grant recipients to train, mentor and otherwise support entrepreneurs in a given sector. Examples of successful Seed Accelerator Program investments include the Madworks Seed Accelerator, serving the Madison region; WERC-Bench Labs, fueling innovation in the energy, power and control sector; and FaBCAP, assisting the growth and scale-up of companies in the food and beverage industry.

Under the Seed Accelerator Program, WEDC provides matching grants to organizations that offer unique, not-for-profit programs that provide intensive training, mentoring and financial assistance to a cohort of entrepreneurs for a specified period of time, typically three to six months. Factors determining the level of funding for grants to businesses include the number of companies per class and the length of the seed accelerator program for each class. The amount of grant funding available per company is generally between $5,000 and $50,000.

TOTAL FULL-TIME JOBS 2015

**201**

TOTAL PART-TIME JOBS 2015

**149**

TOTAL SALARIES FROM 2012-2015

**$8.6M**

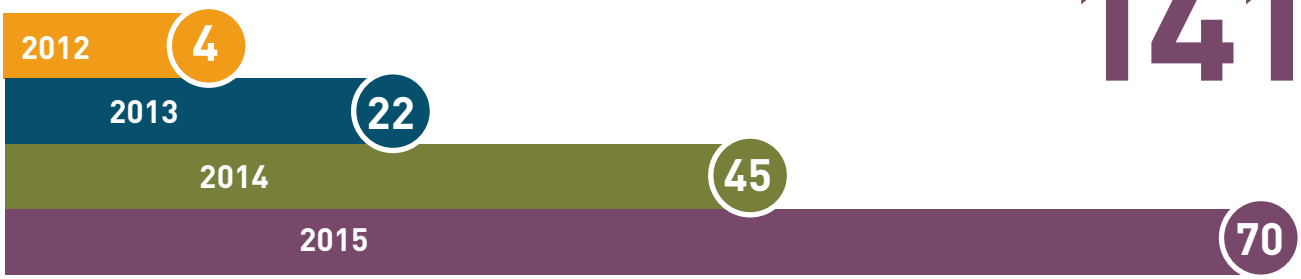
TOTAL RETURN ON INVESTMENT FROM 2012-2015

**$17.2M**

TOTAL BUSINESSES ASSISTED 2012-2015

**141**

## BUSINESSES ASSISTED PER YEAR



## SEED FUNDING TO BUSINESS

### GRANTS

CALENDAR YEAR 2012
$80,000

CALENDAR YEAR 2013
$455,000

CALENDAR YEAR 2014
$527,900

CALENDAR YEAR 2015
$514,522

**$1.6M**

### ROYALTY-BASED FUNDING

CALENDAR YEAR 2014
$110,000

CALENDAR YEAR 2015
$112,500

**223K**

### LOANS

CALENDAR YEAR 2015
$337,500

**338K**

### TOTAL FUNDING

**$2.1M**

# CAPITAL CATALYST LEVERAGES LOCAL ENTREPRENEURIAL NETWORKS

To effectively deploy capital to spur new business generation, you need to be close to the action. That's why WEDC created the Capital Catalyst Program—to make seed grants available to highly structured and well-funded organizations or communities dedicated to stimulating entrepreneurship.

These funds may be offered as grants, loans or investments to startups served by the program participants. While the primary emphasis is on technology-based companies, each organization sets its own criteria based on its particular mission.

Active Capital Catalyst-supported funds include the Ideadvance Seed Fund, in partnership with UW-Extension's CTC; the Wisconsin Technology Innovation Initiative, or Wi2; Bridges to Cures; and the Whitewater Community Development Authority. New funds were developed in 2015 with program awards to Marquette University; the Doyenne Group, supporting women-led enterprises; Racine County Economic Development Corp.; and The Water Council, supporting ventures in water technology.

These organizations have a proven track record of facilitating the creation of high-growth business startups, as well as the ability to provide training and mentoring to startups that benefit from their seed grants. As such, each is eligible for $50,000 to $500,000 of WEDC Capital Catalyst funds, which the recipient organization must match at least 1:1.

TOTAL FULL-TIME JOBS

**482**

TOTAL PART-TIME JOBS

**161**

TOTAL SALARIES, 2012-2015

**$19.8M**

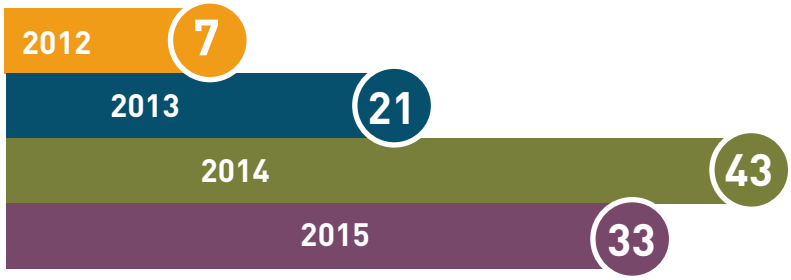
TOTAL RETURN ON INVESTMENT, 2012-2015

**$127.1M**

TOTAL BUSINESSES ASSISTED 2012-2015

**104**

## BUSINESSES ASSISTED PER YEAR



## SEED FUNDING TO BUSINESS, 2012–2015

### GRANTS

CALENDAR YEAR 2012
$35,000

CALENDAR YEAR 2013
$122,128

CALENDAR YEAR 2014
$755,295

CALENDAR YEAR 2015
$942,509

**$1.9M**

### INVESTMENT FUNDING (EQUITY AND ROYALTY-BASED FUNDING)

CALENDAR YEAR 2013
$150,000

CALENDAR YEAR 2014
$752,000

CALENDAR YEAR 2015
$546,500

**$1.4M**

### LOANS

CALENDAR YEAR 2013
$100,000

CALENDAR YEAR 2015
$66,666

**166.6K**

### TOTAL FUNDING

**$3.5M**

# SBIR/STTR MATCHING GRANT PROGRAM FILLS CRITICAL GAPS FOR SMALL COMPANIES

Even when companies secure a highly competitive federal SBIR/STTR grant, certain critical activities are restricted under those federal awards.

WEDC's SBIR/STTR Matching Grant Program, administered through UW Extension's Center for Technology Commercialization as the SBIR Advance Program, provides matching funds that companies can use for activities including market research and patent development. Grants are open to companies located in Wisconsin or those that relocate here.

In providing capital to companies whose ideas have been validated through these coveted federal awards this program helps strengthen the state's innovation economy and increase the success rate of technology startups that create new high-wage jobs in the state.

> "Businesses working through business modeling processes are more likely to be awarded an SBIR grant. In addition, states with matching grant programs have increased success rates for the next phase of federal funding—and that can exceed $1 million."
>
> ~Dave Linz
> Center for Technology Commercialization
> Client Services Director

TOTAL FULL-TIME JOBS

**98**

TOTAL PART-TIME JOBS

**59**

TOTAL SALARIES, FY16

**$8.3M**

TOTAL RETURN ON INVESTMENT, FY16

**$10.8M**

NEW AWARDS IN FY16

**17**

## SEED FUNDING TO BUSINESS, 2015-2016

WEDC FUNDING PER AWARD

**$75K**

TOTAL WEDC FUNDING

**$2.7M**

BUSINESSES ASSISTED

**31**

RETURN ON INVESTMENT

**$21.4M**

# ENTREPRENEURIAL MICRO-GRANTS PROVIDE RESOURCES FOR SMALL BUSINESS

Even for startups fortunate enough to receive grant support or venture investment, funding gaps may exist—or companies may need assistance in getting to the point of being able to draw larger investment amounts. To help companies bridge these gaps, WEDC created the Entrepreneurial Micro-grants Program. Administered by UW-Extension's Center for Technology Commercialization (CTC), the program offers grants for the following purposes:

- Helping companies prepare and submit a proposal for federal Small Business Innovation Research/Small Business Technology Transfer funding or another federal grant.
- Helping companies access the services necessary to develop a comprehensive business plan or commercialization plan
- Covering part of the cost of business modeling or business planning coursework offered by UW-Extension's Small Business Development Centers

In FY16, the Entrepreneurial Micro-Grants Program supported nearly 100 entrepreneurs, with 83 clients receiving support for entrepreneurial training coursework, and 15 more awardees in SBIR/STTR assistance and business commercialization initiatives. CTC clients receiving SBIR assistance received over $10.9 million in federal SBIR/STTR awards. This return on WEDC's investment contributes not only to the success of the companies in question, but also to the health of the state's overall entrepreneurial ecosystem.

BECAUSE OF THIS PROGRAM, COMPANIES WERE ABLE TO ATTRACT **$10.9M** IN FEDERAL GRANT FUNDING

# PARTNERSHIPS MAGNIFY THE IMPACT OF ENTREPRENEURIAL SUPPORT

In its mission to support businesses throughout the state, WEDC relies heavily on its partners, who through their local networks and constituencies, act as the direct link between businesses and the resources that exist to help them succeed. Last year, through partners that exist to serve startups, WEDC's assistance impacted nearly 2,200 companies. Most of these companies are still in the planning stage and have not yet released a product to market—but even so, they are already starting to create jobs: last year, WEDC's assistance through its partners in this area led to the creation of more than 380 jobs, as well as the retention of more than 440 additional jobs.

Center for Technology Commercialization

The UW-Extension **Center for Technology Commercialization** (CTC), which administers the Entrepreneurial Micro-grant, Ideadvance and SBIR Advance programs. In FY16, CTC provided counseling to **266 distinct business** clients—activity which assisted in the creation of **57 new jobs** and the retention of an additional five.

25 YEARS WISCONSIN WOMEN'S BUSINESS INITIATIVE CORPORATION
PUTTING DREAMS to WORK

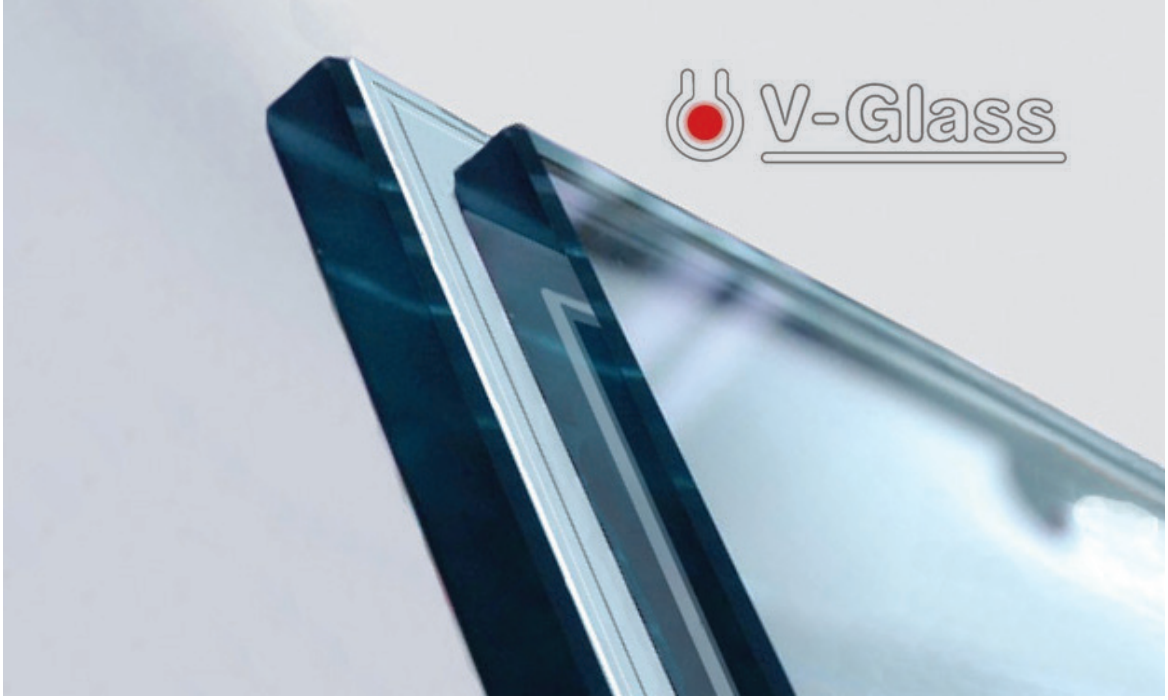
The **Wisconsin Women's Business Initiative Corporation** (WWBIC), which provides micro-loan assistance, quality business education and hands-on consultation to entrepreneurs, with an emphasis on women, people of color and lower-income individuals. In FY16, WWBIC provided **1,637 clients** with counseling services, and WWBIC's micro-loan program provided **$6.7 million** in loan financing to small businesses, including **53 startups**. WWBIC's assistance is expected to facilitate the creation of **292 new jobs** and the retention of **440 positions**.

Job Creation Through Capital Donation
BrightStar WISCONSIN

The **Brightstar Wisconsin Foundation** is a 501(c)(3)-designated nonprofit foundation that manages an equity investment fund capitalized by private donations. BrightStar invests primarily in technology-based, high-growth, early-stage businesses to facilitate job creation and increase economic activity statewide. In FY16, BrightStar made investments totaling over **$1.8 million** in 12 early-stage companies.

Wisconsin Technology Council

The **Wisconsin Technology Council** contributes to the state's high-tech and entrepreneurial economy through its policy work, hands-on work with investors and companies, educational forums and networking events. In FY16, nearly **280 entrepreneurs** benefitted from key WTC events and from assistance delivered by WTC's Wisconsin Angel Network, receiving training, guidance and other unique opportunities to advance their ventures.




# WINDOWS AS WARM AS A WALL

Even when a new technology clearly has potential to revolutionize an industry, high risk and high capital requirements can make it difficult to attract private funding. This is the situation faced by V-Glass, whose vacuum-insulated window glass insulates three times more effectively than the best technology on the market today. Fortunately for the company, state and federal resources exist to fund promising technologies that are still too risky for private investment.

Soon after its founding in 2008, V-Glass founder and CEO Peter Petit received two small state grants that enabled him to retain a professional consultant to assist in writing a business plan. After taking first place in the Wisconsin Governor's Business Plan Contest and receiving well-informed guidance from the UW-Extension Center for Technology Commercialization (CTC), in 2014 the company received a $75,000 grant under CTC's SBIR Advance Program, which is supported by WEDC. As a result, V-Glass was able to hire its first employee and rewrite its business plan based on fresh interviews with key potential customers. The grant also helped pay for two patent applications, a significant expense that is ineligible for federal funding.

The results of this state-level support speak for themselves. Between 2011 and 2015, the company received four Phase I Small Business Innovation and Research (SBIR) grants for $150,000 each. In 2016, not only was V-Glass awarded its first key patent, it was also awarded a $723,000 Phase II SBIR grant from the National Science Foundation. To date, the assistance provided by Wisconsin has been leveraged into federal grants totaling over $1.3 million to develop its game-changing technology.

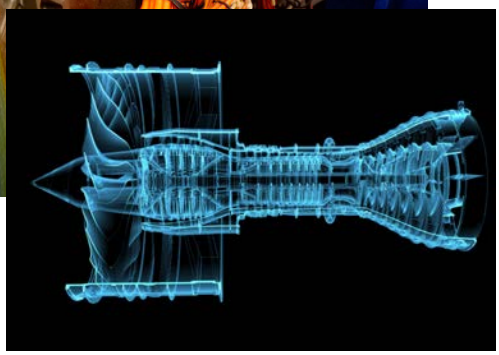
Most energy-efficient windows on the market today are dual-pane or triple-pane glass with argon gas between the panes. Argon is used because it conducts one-third less heat than air, but vacuum-sealed window glass contains no gas at all between the panes, and is more efficient still.

Presently only one company in the world, a Japan-based maker of sheet glass, sells vacuum glass commercially. This company's product is too expensive for the mass market, and its rigid glass seal tends to crack in cold temperatures. In contrast, V-Glass vacuum glass will cost no more than triple-pane, and the company's patent-pending V-Glass edge seal flexes as the outer glass pane shrinks in cold weather. Furthermore, the R-value of the V-Glass product is several times higher—a finding demonstrated in field testing at the Technology Innovation Center at Milwaukee County Research Park, one of the largest high-tech incubators in the U.S.

The technology developed by V-Glass will be offered under license to existing window-makers, primarily for the residential market. It is expected to be ready for commercial sale as soon as 2020. The market for these products is estimated at over $25 billion worldwide.

Wisconsin has provided fruitful conditions for Pewaukee-based V-Glass to develop its technology. The area from Wausau to Minneapolis has been called "Window Alley" due to the number of manufacturers located there, and the largest insulating glass maker in the U.S. has several plants in Wisconsin. "Wisconsin is a natural market for V-Glass," says Petit. "We are able to talk to prospective customers almost every day. We have found enthusiastic support from Wisconsin-based businesses and homeowners because they understand the value proposition.

"V-Glass is a capital-intensive business requiring a great deal of time-consuming research and development," Petit adds. "The funding amounts needed are too large for angel investors, and the company is too 'early-stage' for local venture firms. The state helped us fill gaps and connect us with federal funding for startups that are too risky for the private sector."



SMARTUQ®

# QUANTIFYING THE UNKNOWN WITH UNIQUE ANALYTICAL SOLUTIONS

Uncertainty is a formidable obstacle for a diverse range of manufacturing fields, including aerospace; automotive; energy, power and control; industrial machinery; health technology; and pharmaceuticals. A product is doomed if it looks great on paper but doesn't work in the real world, so new products commonly undergo many rounds of simulation, testing and redesign before being formally launched. This process is time-consuming and costly—but Madison-based SmartUQ has a solution.

SmartUQ's proprietary software utilizes advanced analytics to quantify uncertainty, drastically accelerate the testing and design cycle, and increase confidence in decisions. This translates into reduced costs, better designs, shorter time to market, and decreased risk for SmartUQ's customers.

After four years in business, SmartUQ counts Fortune 500 companies among its customers. The company continues to expand into new industries, and is growing rapidly, hiring programmers, engineers, and sales and marketing professionals and doubling the number of people it employs every year. In addition to its proprietary software, SmartUQ offers technical assistance and support, as well as consulting, for companies with complex problems they are seeking to solve through modeling and analytics.

"We started the company based on the requests we were getting from a number of large engineering companies," says SmartUQ Chief Scientist Peter Qian, who is also a professor in the Department of Statistics and the Department of Industrial and Systems Engineering at the University of Wisconsin-Madison. "We're proud to say that SmartUQ has been able to solve some of the most difficult and longstanding problems in the industry."

Qian says Madison has been the perfect location for the new company to grow. "We have a very deep talent pool here, with the presence of the university and Epic Systems," he says. SmartUQ is certified through the Qualified New Business Venture Program (see page 6), and in general benefits from Madison's healthy startup ecosystem, whose quality "increases every day," says Qian. "There are so many startups in Madison now, especially in IT. Madison has an excellent quality of life, and being located here really helps us to attract employees."


# MAKING SMART DEVICES AS POWERFUL AS THE HUMAN BRAIN

When Atif Hashmi and Andrew Nere were electrical engineering Ph.D. students at the University of Wisconsin-Madison, their research involved developing algorithms to mimic how the human brain processes sensory input. As their researched progressed, they began to see opportunities to improve users' experience with smart devices, which often collect sensory data and aspire to process it as efficiently and accurately as the human brain does.

Along with their research advisor, engineering professor Mikko Lipasti, Hashmi and Nere founded Thalchemy, a Madison-based company whose technology enables more efficient and accurate processing of sensory data. Applications include smartphones and watches, fitness trackers, and applications in the gaming and lifestyle areas and beyond. Thalchemy recently licensed its technology to a company that will use the algorithms to monitor the audio environment for signs of danger—so, for example, in addition to public safety cameras capturing visual footage, the cameras might include audio sensors that alert first responders when gunshots are heard.

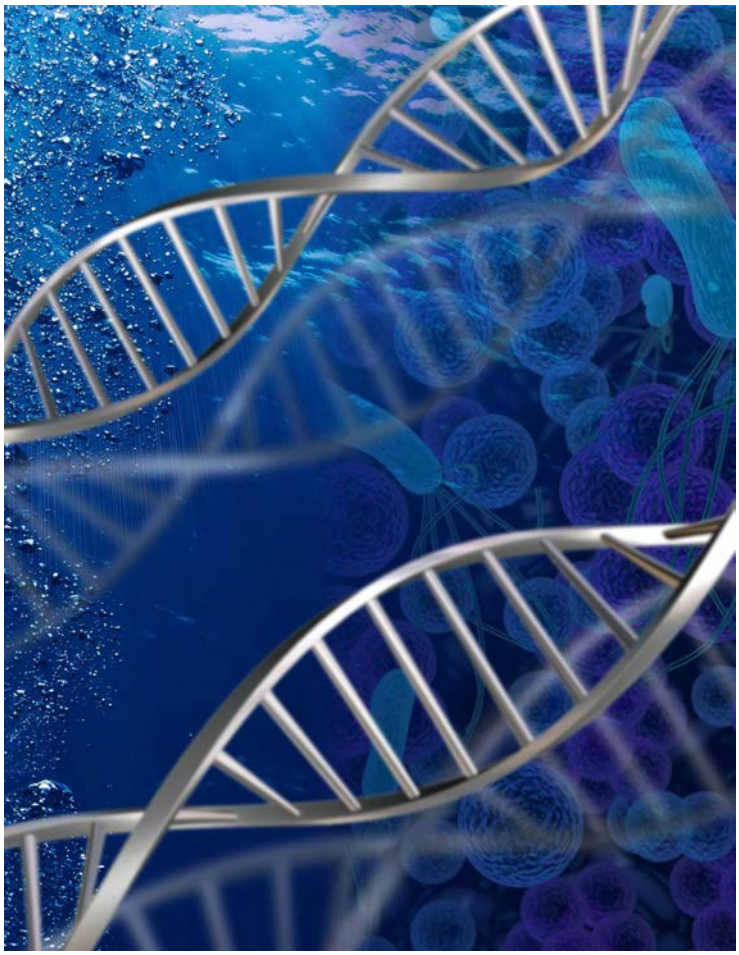
Although sensors are everywhere, "the accuracy of existing algorithms is not that great, so people don't enjoy the experience of using them that much," says Hashmi. Not only are Thalchemy's algorithms more accurate than what's already on the market, but they are also designed to use a low level of power—another reason they'll appeal to consumers, since apps that use the company's technology won't drain a device's battery.

The company is also working to develop an algorithm that can recognize biometric identifiers that are unique to the individual. Fingerprints meet this standard, but many people decline to enable fingerprint authentication since they're anxious the fingerprint image might be uploaded to the cloud and then compromised. Preferable would be a biometric that, for example, combines a person's heart rate "signature" with the cadence of his or her walk to provide unique identifier based on vital signs. In this case, there would be no image, password or other data to be potentially hacked. Rather, the device would gather data in real time, and would only unlock when its owner was nearby.

Thus far, the company has benefited from the National Science Foundation's Small Business Innovation and Research (SBIR) funding as well as the SBIR Advance Program, funded by the Wisconsin Economic Development Corporation and administered by the Center for Technology Commercialization. Thalchemy is also certified to attract investment through the Qualified New Business Venture Program.

"This support has allowed us to bring our product to market faster than we would otherwise have been able to do," says Hashmi. Thalchemy began at UW-Madison, and has continued to benefit from the university's resources and expertise, he says: "UW produces very smart people, and most of them have to go to other states to find technical jobs—but we've been able to tap into that smart crowd because of our proximity to the university."

# LETTING NO MICROBE GO UNDETECTED

MICROBE DETECTIVES

The prevailing methods of microbial analysis for drinking water have been in use for more than 100 years. Continuing to use these methods, in spite of the technological advancements that have been made, is akin to modern-day businesses eschewing computers and communicating entirely by telephone and fax. "The standard methods of culture and microscopy can identify 1 percent or less of the microorganisms in our water," explains John Tillotson, CEO of Milwaukee-based Microbe Detectives.

Technology developed by Microbe Detectives, however, enables identifying 100 percent of the microorganisms in water. As it becomes more widely adopted, Microbe Detectives' technology has the potential to improve water safety and reduce the incidence of waterborne disease, both domestically and around the world. In addition, this sophisticated analysis can be applied to water used for industrial processes, thus ensuring product quality and process efficiency for business and municipal users alike.

This revolutionary technology was developed by Trevor Ghylin as part of his work for a Ph.D. in civil and environmental engineering at the University of Wisconsin-Madison. Around the time Ghylin completed his degree in 2013, The Water Council was announcing plans for a new accelerator for water technology companies. Ghylin applied and was admitted to the first class of the "Business. Research. Entrepreneurship. In Wisconsin" (BREW) accelerator, and during that year, Microbe Detectives was born.

The Milwaukee-based company won a Wisconsin Innovation Award in 2014 and was a finalist in the Governor's Business Plan Contest the same year. Today, the company has more than 100 customers including both public utilities and private companies. Microbe Detectives recently signed an agreement to license its technology to LuminUltra, a Canadian company that specializes in real-time assessment of microbial activity. Once activity is detected with LuminUltra's proprietary technology, Microbe Detectives' analytical methods will be used to identify the nature of the microbes and determine whether they pose a health risk. Since LuminUltra has customers worldwide, the agreement represents a major expansion of Microbe Detectives' sphere of impact.

Microbe Detectives presently has four employees, but expects to expand to about a dozen once its next funding round is in place. From the BREW participation to the company's office location in the Global Water Center—and the technology's genesis at UW-Madison—"we have benefited immensely from being located in Wisconsin," says Tillotson. The company has taken advantage of its proximity to UW-Milwaukee's School of Freshwater Sciences, and has received computational science support from the Milwaukee Institute.

"Wisconsin is an excellent place to start a business, particularly a water technology business," says Tillotson. "It has an entrepreneurial culture with access to extensive resources. The strong data science culture in Madison is beginning to be applied in the water technology sector. The two areas are coming together, and we are helping to push that envelope."

For more information about available investment opportunities contact:

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The Wisconsin Economic Development Corporation (WEDC) leads economic development efforts for the state by advancing and maximizing opportunities in Wisconsin for businesses, communities and people to thrive in a globally competitive economy. WEDC provides resources, operational support and financial assistance to companies, partners and communities in Wisconsin. WEDC achieves its mission through initiatives driven by five strategic pillars: business development; community and economic opportunity; strategic economic competitiveness; state brand management and promotion; and operational and fiscal excellence. Working with more than 600 regional and local partners, WEDC develops and delivers solutions representative of a highly responsive and coordinated economic development network.

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