



**Third Frontier**

Innovation Creating Opportunity

**2011 Annual Report**



**Department of  
Development**

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**Christiane Schmenk**, Director



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December 2011

**John R. Kasich, Governor, State of Ohio**  
**General Assembly, State of Ohio**

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Dear Colleague,

I am pleased to present to you the 2011 Ohio Third Frontier Annual Report. This has been a significant year, and the Ohio Third Frontier's success is continuing to raise the technology-based economic development standard in Ohio. This Annual Report demonstrates that with our inventive and creative spirit, determination, and bipartisan commitment, the Ohio Third Frontier is bringing prosperity to our state through job creation.

The Ohio Third Frontier is achieving sustainable growth for companies in all stages of development and across the continuum of commercialization. In 2011, the total companies created or capitalized in Ohio or relocated to Ohio since the beginning of the Ohio Third Frontier reached 701. The Ohio Third Frontier has continued to leverage nearly \$9 in additional federal and private funding for every \$1 of invested state funds. These funds further support cutting-edge and high-value projects that are leading to the commercialization of new products and processes in the global marketplace; the growth of new companies in Ohio; medical techniques that are improving the quality of life for our citizens; and advanced energy technologies that are reducing environmental impact.

Also in 2011, the Ohio Third Frontier partnered with JobsOhio to create, retain, and attract jobs in and to Ohio and to provide critical attention to emerging and promising opportunities around the state. Consisting of six regional economic development-focused organizational partners and their collaborators, the JobsOhio Network is aggressively pursuing the retention, expansion, and recruitment of businesses with high potential for job and wealth creation in Ohio as well as transitioning technologies from the laboratory into new companies and commercial products. Together, the Ohio Third Frontier and the JobsOhio Network are leveraging statewide and regional strengths and tightly integrating technology and entrepreneurial assets that are at the core of Ohio's innovation economy to create jobs for Ohioans.

On behalf of the Ohio Third Frontier Commission, the Ohio Third Frontier Advisory Board, and the Ohio Department of Development, we are proud to present to you the 2011 accomplishments in this report. These, and all of our Ohio Third Frontier successes, serve as a testament to what we can achieve with our steadfast investments in Ohio.

Thank you for your continued support of the Ohio Third Frontier.

Sincerely,

Christiane Schmenk, Chair  
Ohio Third Frontier Commission  
Director, Ohio Department of Development

## Ohio Third Frontier: Successes

### Ohio's New Entrepreneurs Fund (ONE Fund)

Entrepreneurial business accelerators have become major players in developing and supporting many of today's newest and most successful technology-based entrepreneurs and companies. These accelerators can be viewed as intensive entrepreneurial boot camps, and provide valuable resources, including mentorship and advising, access to business services, and access to investment capital and market-entry support.



In May 2011, OhioThird Frontier launched **Ohio's New Entrepreneurs (ONE) Fund** with the goal to attract and retain the best and brightest entrepreneurial talent in Ohio by directing resources to accelerate company formation and development, assist young companies in attracting follow-on investment, and foster a culture of entrepreneurship while raising visibility and excitement about entrepreneurship in Ohio. The ONE Fund pilot program was deployed in partnership with the Center for Entrepreneurship at The Ohio State University's Fisher College of Business, and their newly formed business accelerator called 10-xelerator (10x).

In its inaugural offering, 121 Ohio, national and international teams submitted applications to participate in the program. Through a highly competitive process, 10 teams were selected to participate in an intensive 11-week program that was led by internationally recognized Dr. Michael Camp, Executive Director for the Center for Entrepreneurship at the Fisher College of Business. The program provided participants workspace and formal



and informal educational sessions, as well as conducted weekly dinners and social events. A network of 46 mentors, including seasoned entrepreneurs, industry experts, and risk capital investors, were actively engaged with the teams on a daily basis and provided invaluable business advice and customer contacts. One of the additional highlights of the program for the teams was a dinner with Governor John Kasich at the Governor's Residence.

Teams participating in the ONE Fund were not required to have created a formal business at the start of the program, but were expected to demonstrate a technology and commercially-viable business concept to investors at the end of the program. A number of the teams were able to launch a beta prototype during the program to validate their business concept and demonstrate early market traction. The program culminated in a New Venture Showcase Day where the teams pitched their ventures to dozens of Ohio and national investors.



At the conclusion of the summer 2011 ONE Fund program, nine companies graduated, seven of which are in Ohio. To date, five companies have raised follow-on capital totaling more than \$2.3 million, resulting in greater than 10-fold leverage of the initial OhioThird Frontier investment.

Based on the results of the pilot program, OhioThird Frontier is planning to expand the ONE Fund to additional accelerators within Ohio, which will be competitively selected and announced in the spring of 2012.

## First Ohio Third Frontier Loan Goes to First-in-Ohio Green Data Center; Northwest Ohio Enhances its Reputation as an Advanced Energy Hot-Spot

Rapidly rising energy costs have had a major impact on what we pay to drive our cars, heat our homes, and feed our families. Corporations and business leaders also are feeling economic pressures as the cost of energy rises. Within the business community, data center operational costs have been heavily impacted by the rising costs of energy, especially the cost of energy needed to power and cool facilities, computer rooms, and data centers. The good news is that going green in a data center does indeed have a measurable Return on Investment, can significantly reduce an organization's energy costs, and can be achieved with a minimal amount of upfront costs.

In Ohio, Walbridge-based GEM Energy Management, Inc. (GEM) has teamed up with the University of Toledo on a project to design, develop, and commercialize a new "Modular Mission Critical Power System" that will drastically reduce power consumption and increase electric reliability at the campus data center. The University of Toledo project will be the second Green Data Center in the country and the first in Ohio. For the pilot project at the University of Toledo, GEM will develop and implement key technologies and techniques for its modular power system to reduce onsite installation requirements. The new power system will reduce by 50 percent the amount of fossil fuels needed to power the university's data center.

The GEM project also has the distinction of being the first recipient of an Ohio Third Frontier loan. The \$1 million investment is a unique hybrid that leverages the best advantages of a grant, a loan, and an equity investment into one structure. With the Ohio Third Frontier loan, portions of the principal are forgiven and there is a minimum repayment when specific requirements are met, and repayment is based upon revenues with a cap of \$1.75 million, making the risk and reward shared between GEM and Ohio Third Frontier.

This type of project will create jobs, help to reduce the use of fossil fuels, and increase the reliability of critical facilities. This "triple impact" can be replicated at other data centers and government mission critical operational facilities. This unique loan will serve as an important model for Ohio Third Frontier going forward.

## General Electric Aviation Systems Invests more than \$50 Million through Key Partnerships with Ohio Universities

General Electric (GE) Aviation Systems, specifically its Electrical Systems Division in Vandalia, Ohio, has partnered with the University of Dayton Research Institute (UDRI) to create the Electrical Power Integrated Systems Center (EPISCenter) that will enable the design, development, testing, and manufacturing of integrated aircraft electrical power systems. This strategic partnership will assist GE in transitioning from a components manufacturer to a complete electrical power systems supplier, and will enhance GE's position to win future aircraft production contracts. Ohio Third Frontier has supported this partnership through a \$7.6 million Research and Development Center Attraction Program (RDCAP) award matched by a \$50.7 million commitment from GE for the construction and operation of the EPISCenter. The construction of the 115,000-square-foot facility on the University of Dayton campus is currently underway, with expected completion in 2012.



115,000-square-foot EPISCenter facility on University of Dayton campus

GE's Electrical Systems Division has also partnered with The Ohio State University (OSU) and Wright-Patterson's Air Force Research Laboratory (AFRL) to form the Center for High Power Performance Electronics (CHPPE), supported by a \$3 million Ohio Third Frontier Wright Project award with a \$6 million matching commitment from the project partners. The focus of this project is the research and commercialization of silicon carbide power semiconductors for electrical power handling in the military and civil aircraft industry. The project will power semiconductors that operate at higher temperatures, higher switching frequencies, and lower switching losses for aircraft engine starting, emergency power, battery charging, and circuit breakers. Additional applications may include the hybrid electric vehicle industry, renewable energy systems including wind and solar, and eventually consumer products.

## Global Cooling and the Entrepreneurial Signature Program

Established in 1995, Athens-based Global Cooling, Inc. develops high-performance, energy-efficient cooling products for the scientific, medical, and electronic fields. Utilizing their patent-protected Stirling cooling technology, Global Cooling's environmentally friendly cooler and freezer system products provide users a dramatic reduction in energy costs – savings of more than 50 percent over conventional technology – without sacrificing performance or reliability. The company has established itself as a strong competitor in the \$250 million ultra cold (-80° C and below) market.

Global Cooling has received substantial entrepreneurial services and capital investment since 2006 from TechGROWTH Ohio, the Ohio Third Frontier's **Entrepreneurial Signature Program** (ESP) partner for the 19-county Southeast Ohio region. The ESP is designed to significantly increase technology-based entrepreneurial commercialization outcomes throughout a defined geographical region and to focus efforts on strategic technology-based sectors offering exceptional economic development prospects for each of the six defined Ohio regions. An ESP organization integrates sources of deal flow, entrepreneurial support, and risk capital funding to effectively grow the technology-based entrepreneurial commercialization outcomes throughout its region. TechGROWTH's partners include Ohio University, The Ohio State University South Centers, the Edison Biotechnology Institute, Adena Ventures, and the Muskingum County Business Incubator.

In 2009 and in partnership with the East Central Ohio Tech Angel Fund and five individual angel investors,



TechGROWTH invested \$1.3 million in Global Cooling to accelerate development and market introduction of several products, including the world's first portable ultra-low temperature freezer (-80° C, -112° F). This freezer weighs less than one-third of its nearest competition and consumes less than 25 percent of the power.

An industry first, Global Cooling's Shuttle™ cold freezer is a lightweight portable ultra-cold freezer that is operable from a standard automotive power outlet. This freezer allows for short- or long-term transportation of vaccines or biological specimens for clinical and diagnostic medicine. Global Cooling has distributed hundreds of its Shuttle™ freezers, and is starting production of its larger under-counter models. In 2011, Ohio University's business incubator, the Innovation Center, became the first customer of Global Cooling's under-counter Shuttle™ freezer by purchasing and installing three of these ultra-cold freezers. The freezers are manufactured locally by Athens-based Stirling Ultracold, a spin-out division of Global Cooling, Inc.



## AssureRx Health and Infomotion Sports Technologies; Successful Innovation Ohio Loan Fund Recipients

Under Ohio Third Frontier, the Innovation Ohio Loan Fund (IOLF) assists Ohio companies developing next-generation products and services within targeted industry sectors by financing the acquisition, construction, and related costs of technology, facilities, and equipment. Ohio's manufacturing sector is a key target of this program. The IOLF addresses an identified need in the capital-funding continuum by supplying capital to Ohio companies having difficulty securing funds from conventional sources due to technical and commercial risk factors associated with the development of a new product or service.

Two successful IOLF investments have been to Mason-based AssureRx Health, Inc. and Dublin-based Infomotion Sports Technologies, Inc.

- AssureRx Health, Inc. is a personalized medicine company helping clinicians determine the right drug for individual patients suffering from medical conditions. AssureRx was formed in 2006 to license and commercialize personalized medicine technology from a partnership between the Cincinnati Children's Hospital Medical Center and the Mayo Clinic. The company's proprietary technology is based on pharmacogenetics (the study of how genetic makeup influences a person's reaction to drug treatments) as well as evidence-based medicine and clinical pharmacology.

In 2009, AssureRx received a \$1.2 million IOLF award to support the further development of the company's GeneSightRx<sup>®</sup> genetic testing product and for the expansion of AssureRx's laboratory and testing facilities. GeneSightRx<sup>®</sup> has a high potential of providing faster, better patient results, and lower cost care for psychiatric conditions such as clinical depression, anxiety disorder, and schizophrenia. AssureRx has created 25 full-time jobs and has retained seven full-time positions at its facility. Working with the City of Mason, AssureRx will be moving into a new corporate headquarters in the Mason Community Center health and fitness complex in January 2012 and, as an emerging psychiatric healthcare company, is reinforcing Mason's fitness and wellness theme. The company expects job creation to increase rapidly over the next three years, growing to 90 full-time jobs in Mason by 2014. This staff will comprise positions ranging from research scientists, medical science liaisons, lab technicians, and technical support to software developers and quality assurance engineers.

In March 2011, AssureRx closed on an \$11 million Series B financing to expand direct sales and marketing for GeneSightRx<sup>®</sup> and for second-generation product development activities. Leading the funding round were California-based Sequoia Capital and Claremont Creek Ventures. Also included in the funding round were existing investors Cincinnati Children's Hospital, the Mayo Clinic, and CincyTech, along with new investor Allos Ventures.

- Infomotion Sports Technologies develops sophisticated but cost-effective sports skill analysis technologies, such as for basketballs through the company's 94Fifty<sup>®</sup> Basketball Technologies brand. The company's highly advanced motion-sensor technology is embedded in basketballs to calculate bounces, ball spin rate, and velocity, and provides personalized assessments of a player's athletic skill. The 94Fifty<sup>®</sup> technology is able to quantify and digitize muscle-memory-based athletic skills. Coaches and trainers are provided with key analysis information so that players are better able to develop their skills.

Infomotion Sports Technologies, Inc. received a \$750,000 IOLF award to further develop and commercialize motion sensor-based sporting equipment and software for athletic and sporting organizations. Through



the IOLF award, Infomotion has established its headquarters in Dublin, Ohio from Massachusetts along with an adjacent "laboratory" comprised of both full- and half-size basketball courts and a commercialization scale-up production facility currently capable of producing 50 motion-sensor systems per week. Infomotion has also developed an online community site at [www.94Fifty.com](http://www.94Fifty.com), with more than 3,000 registered community members. Infomotion has created 10 jobs, with three more expected in early January 2012. Further, the company has contracted with Lsi AdL Technology in Hilliard, Ohio to manufacture all of Infomotion's sensor boards.

Infomotion services clients from the elite college level all the way down to youth leagues in more than 20 states and seven countries. The company continues to evolve its technology to reach players directly and engage in their daily workouts to better track the players' developmental progress. Infomotion is attracting interest from all major areas of sports, including ESPN Sport Science, major sporting labels, and national skills academies, and will be launching a webTV series with an NBA star in early 2012.

## Two Ohio Research Scholar Clusters Successfully Complete Recruiting

The Ohio Research Scholars Program (ORSP) utilizes research clusters to pursue specific technology/research focus areas that are competitive, unique, and sustainable in Ohio. A research cluster consists of distinguished and highly productive faculty and researchers, quality graduate students, infrastructure, and robust academic, business, and government collaborations that have led to the attainment of international prominence in research and commercialization. The ORSP was developed to strengthen and increase the number of research clusters at Ohio's academic institutions that support regional economic development priorities. The ORSP meets these goals through investing in senior research talent, facilities and equipment, and promoting collaborations between research and commercialization partners required to sustain the lines of research.

The ORSP provided state-funded endowments to nine clusters in 2008, of which two clusters have completed the hiring of all Ohio Third Frontier-funded endowed positions in 2011.

The Advanced Energy Cluster, which involves teams from The Ohio State University and Ohio University, was the first to complete its recruiting. This cluster was awarded two endowed positions, totaling \$10.4 million in state funding, and is focused on advanced coal technologies and their "green" utilization. Dr. David Cole, previously distinguished Staff Scientist at Oak Ridge National Laboratory (ORNL), was recruited by The Ohio State University and named the Ohio Research Scholar in Subsurface Extraction and Carbon Sequestration Sciences. In 2009, Dr. Cole won ORNL's top individual award for Outstanding Individual Achievement in Science and Technology for his contributions to ORNL's growing geochemistry program. Dr. Sunggyu K.B. Lee, originally from the Missouri University of Science and Technology, was recruited by Ohio University and named the Ohio Research Scholar in Coal Syngas Utilization. Widely regarded as the top researcher in the United States in clean coal technology and syngas conversion to fuel, Dr. Lee is also the author of seven books and the recipient of 29 U.S. patents and 80 international patents, making him Ohio University's top patent holder. The talent of this research cluster's team members and resources are helping to lead the way in Ohio's quest for unmatched knowledge and innovation in advanced energy.

The second cluster to complete its recruiting was the Layered Sensing Cluster, a partnership between the University of Dayton, Wright State University, The Ohio State University, Central State University, and Miami University. This cluster was awarded three endowed positions and total state funding of \$24.3 million. Dr. Vijayan Asari, an expert in facial recognition and image enhancement, and author of more than 250 research and journal papers, was named Ohio Research Scholar in Wide Area Surveillance at the University of Dayton. Dr. Asari came to the University of Dayton from Old Dominion University where he was founding director of the Computational Intelligence and Machine Vision Laboratory. Dr. Elliot Brown was named Ohio Research Scholar in Experimental Sensor Physics at Wright State University. Dr. Brown's expertise is in terahertz light waves that can be used to detect and image cracks, corrosion, and other defects or qualities not visible to the naked eye, as well as be used in penetrating radar to detect underlying make-up or anomalies. Prior to coming to Wright State University, Dr. Brown was a professor of engineering and physics at the University of California, Santa Barbara. Rounding out this cluster is Dr. Chris Baker, Ohio Research Scholar in Integrated Sensors Systems. Dr. Baker is one of the top radar systems researchers in the world with more than 200 publications to his credit. Prior to coming to The Ohio State University, Dr. Baker was dean and director of the College of Engineering and Computer Science at Australian National University. This impressive collaboration of scholarly talents offers significant contributions to the growth of the Ohio layered sensing cluster, making Ohio a center of excellence and increasing the support for economic development priorities.

## Fiscal Year 2011 Financial Information

**Total Awards: \$87,984,206**

Sources: Ohio Third Frontier Research and Development Fund, Wright Capital Fund, Biomedical Research and Technology Transfer Trust Fund, and Ohio Third Frontier Action Fund

### Awards:

Ohio Third Frontier Program	Number of Awards	Amount (dollars)
Advanced Energy Program	11	\$9,149,996
Advanced Materials Program	7	\$6,923,729
Biomedical Program	8	\$7,982,737
Fuel Cell Program	4	\$3,994,138
Medical Imaging Program	4	\$3,986,649
Photovoltaic Program	5	\$4,044,292
Sensors Program	4	\$4,000,000
Wright Projects Program	3	\$7,536,257
Pre-Seed Fund Capitalization Program and Entrepreneurial Signature Program	13	\$25,432,377
Internship Program*	7	\$2,246,000
Targeted Industry Attraction	2	\$1,400,000
Research Incentive	N/A	\$8,000,000
Administrative Expenses	N/A	\$3,288,031
<b>Total Expenditures</b>		<b>\$87,984,206</b>

\* Regionally-based organizations coordinate deployment of the Ohio Third Frontier funds at up to \$3,000 per internship

### Ohio Third Frontier Performance Metrics – 2011

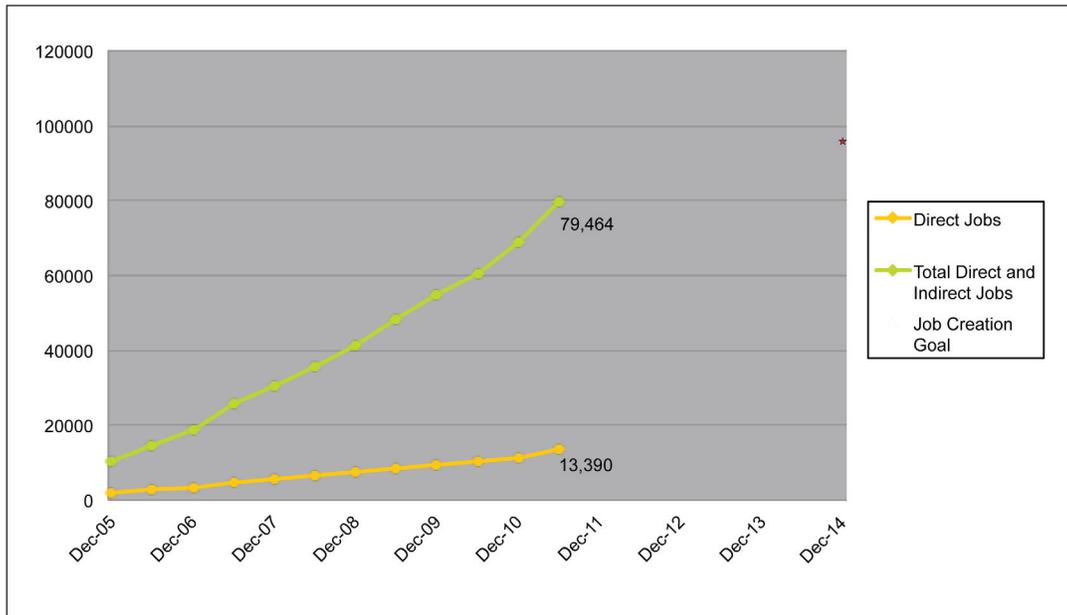
Performance Criteria	As of 12/31/2010	As of 6/30/2011	Percentage Change
State Funds Awarded	\$1,056,612,577	\$1,095,815,956	3.7%
State Funds Expended	\$684,539,650	\$764,415,366	11.6%
Cost Share Reported	\$1,192,896,278	\$1,260,438,871	5.7%
Leveraged Dollars	\$5,986,979,237	\$6,601,214,423	10.2%
Leverage Ratio* (Goal 3.5:1)	8.5:1	8.6:1	1%
Direct Jobs Created	11,402	13,390	17%
Total Direct and Indirect Jobs**	68,855	79,464	15%
New Companies – Portfolio, Attracted, Created	657	701	6.7%
Average Salary	\$64,834	\$62,969	-3%
Cost Per Job***	\$60,036	\$57,086	-5%

\* Leveraged dollars to state funds expended (does not include any cost share)

\*\* Metric based on multiplier from 2009 SRI Report, *Making an Impact: Assessing the Benefits of Ohio's Investment in Technology-Based Economic Development Programs*

\*\*\* State funds expended/direct jobs created

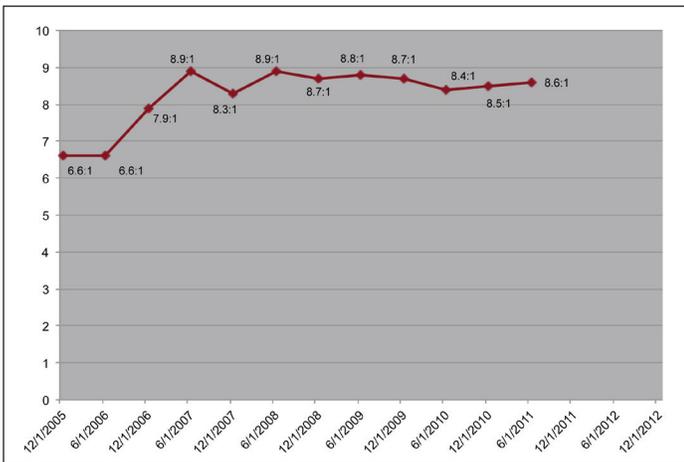
### Ohio Third Frontier Direct & Indirect Jobs



Goal equals value estimated by Ohio Public Expenditures Council

**13,390 direct jobs** (Types of direct jobs – Prod/Mfg: 23%; R&D: 50%; Admin/Other: 26%)

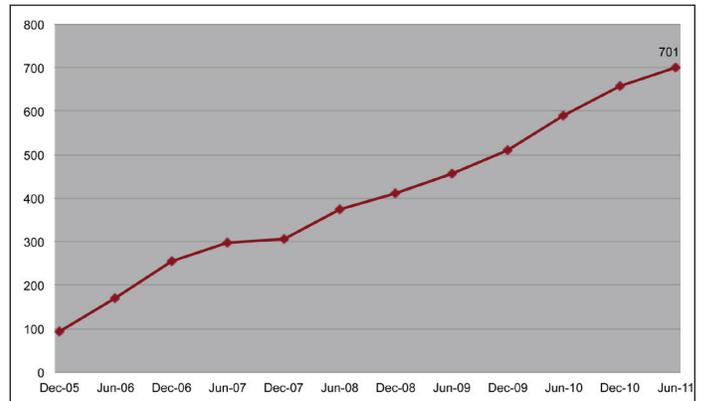
### Ohio Third Frontier Leverage Ratio



3.5:1 equals Biomedical Research and Technology Transfer Commission, and Ohio Public Expenditures Council estimated leverage

Dollar value of *leverage* is **\$6.6 Billion**

### Ohio Third Frontier Company Creation/ Capitalization/Attraction



Companies reported that have since ceased all operations in Ohio: **62**

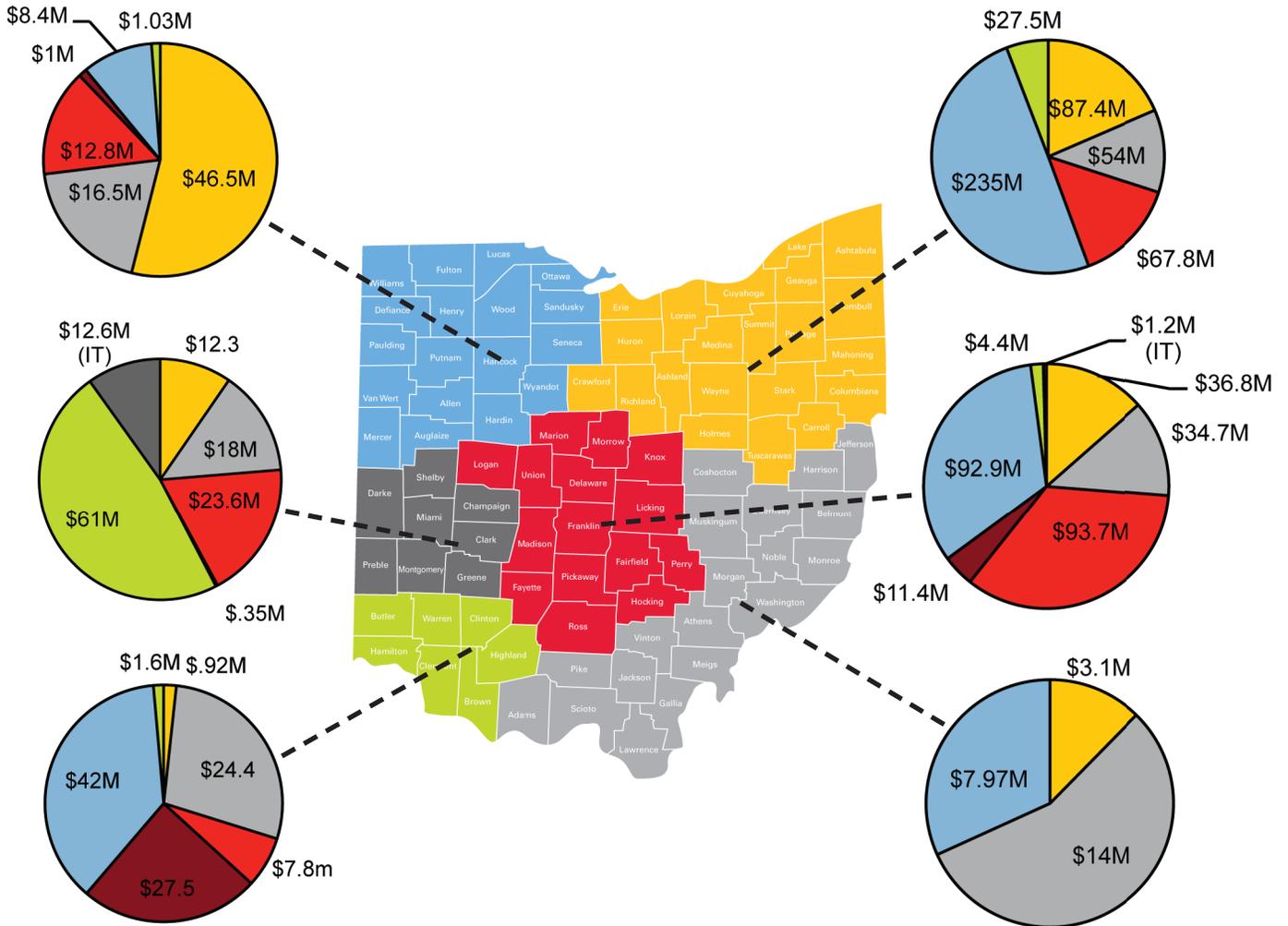
## Grand Summary of Statistics

Program Name	State Funds Awarded	State Funds Expended	Cost Share Expended	Leverage Received	Jobs Created/Retained	Companies Created/Attracted	Leverage Ratio	Cost per Job Created	Average Salary
Biomedical Research Commercialization Program	\$151,769,922.96	\$130,834,008.58	\$199,670,305.73	\$907,671,713.26	1665.5	24	6.9	\$78,555.39	\$63,698.87
Engineering Research Commercialization Program	\$81,677,370.00	\$65,188,870.86	\$77,795,681.03	\$276,823,040.98	523	5	4.2	\$124,644.11	\$64,406.96
Wright Centers of Innovation (Biomedical)	\$87,302,970.00	\$84,785,793.34	\$183,401,014.55	\$441,596,577.04	752.5	13	5.2	\$112,672.15	\$102,401.85
Wright Centers of Innovation (Engineering )	\$148,094,300.00	\$123,813,500.36	\$260,970,943.01	\$877,082,035.00	1290	35	7.1	\$95,979.46	\$60,208.06
Wright Mega-Center of Innovation	\$59,999,086.00	\$28,057,812.35	\$75,117,846.31	\$246,450,825.00	184	30	8.8	\$152,488.11	\$68,000.00
Wright Projects	\$94,834,621.00	\$57,042,972.86	\$100,292,063.00	\$169,279,852.73	489	12	3	\$116,652.30	\$59,215.74
Ohio Research Scholars Program	\$146,510,334.00	\$47,437,902.53	\$28,119,470.33	\$39,310,353.71	136	3	0.8	\$348,808.11	\$69,242.44
Biomedical Cluster Program	\$4,985,623.00	\$1,182,146.95	\$1,827,917.69	\$165,000.00	3	0	1.6	\$394,048.98	\$165,000.00
Medical Imaging Cluster Program	\$8,975,821.00	\$1,399,364.87	\$2,274,553.50	\$2,701,520.25	45.4	0	1.9	\$30,823.01	\$63,631.15
Adv. Materials Cluster Program	\$7,655,943.00	\$2,500,717.37	\$3,640,537.07	\$11,965,683.00	18.5	0	4.8	\$135,173.91	\$72,830.58
Sensors Cluster Program	\$4,977,738.00	\$3,223,613.35	\$3,717,468.87	\$2,015,520.00	44.5	0	0.6	\$72,440.75	\$50,509.88
Adv. Energy Cluster Program	\$35,549,968.00	\$18,002,358.14	\$16,087,540.52	\$104,521,342.84	221.44	5	5.8	\$81,296.78	\$52,141.65
Fuel Cell Cluster Program	\$51,286,139.00	\$42,667,128.72	\$32,795,176.06	\$177,230,231.72	360.5	4	4.2	\$118,355.42	\$58,715.51
Photovoltaics Cluster Program	\$10,333,963.00	\$2,928,736.40	\$2,122,879.26	\$1,526,787.02	13	0	0.5	\$225,287.42	\$68,361.69
Ohio Research Commercialization Grant Program	\$13,333,115.00	\$12,908,273.29	\$5,922,380.49	\$202,421,038.64	304	14	15.9	\$41,885.77	\$58,417.78
Third Frontier Action Fund	\$18,582,863.00	\$17,342,876.96	\$32,335,323.42	\$138,494,215.00	428	51	8	\$40,520.74	\$52,238.82
Pre-Seed and Seed Funds	\$64,628,682.00	\$39,974,615.67	\$182,622,320.72	\$2,002,408,770.46	3453.5	335	50.1	\$11,575.10	\$68,361.69
Entrepreneurial Signature Program	\$105,659,427.00	\$85,299,673.98	\$51,725,449.97	\$997,824,564.24	3458.7	240	11.7	\$24,662.35	\$52,393.13
<b>Grand Total</b>	<b>\$1,096,157,885.96</b>	<b>\$764,590,366.58</b>	<b>\$1,260,438,871.53</b>	<b>\$6,601,214,422.89</b>	<b>13,390</b>	<b>701**</b>	<b>8.6</b>	<b>\$57,086.22</b>	<b>\$62,969.40</b>

\*Expenditure for endowment is recorded once a research scholar has been hired

\*\*Adjusted to eliminate duplication of company data by collaborating programs

Ohio Third Frontier Funds Awarded by Sector/Region

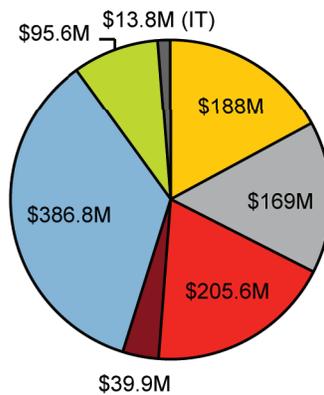


**Awards Per Region:**

Northeast: 181  
 Central: 92  
 West Central: 49  
 Northwest: 35  
 Southwest: 28  
 Southeast: 8

**Total State Funds Per Region:**

Northeast: \$472M  
 Central: \$272M  
 West Central: \$127.7M  
 Southwest: \$112M  
 Northwest: \$86M  
 Southeast: \$25M



- Biomedical
- Advanced Energy
- Instruments, Controls & Electronics
- Advanced Materials
- Advanced Propulsion
- Funds



**John R. Kasich**, Governor

**Department of  
Development**

**Christiane Schmenk**, Director