



**THE COMPREHENSIVE ECONOMIC DEVELOPMENT IMPACTS
OF THE FLORIDA INSTITUTE FOR THE COMMERCIALIZATION OF PUBLIC RESEARCH
TO THE STATE OF FLORIDA**

Submitted to:
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I. Executive Summary

- The Florida Institute for the Commercialization of Public Research (the Institute) plays a catalytic and growing role in supporting the economic development strategy of Florida.
- The Institute works alongside universities and research institutions throughout the State. The Institute works with its research partners to uncover commercially viable technologies and begin the company-building process. Recognizing that proper planning and execution in the early stages of company development improve the chances for future funding and growth, the Institute delivers value-added support services that help minimize risk and position companies for success. The Institute is essential to the State's economic development and its competitive positioning in the global marketplace, fulfilling a "niche" where seed capital is unlikely to be sufficiently available initially through the private marketplace.
- In essence, the Institute facilitates the commercialization of new discoveries by funding startups in close collaboration with technology licensing officers across Florida, aiding the leveraging of an estimated \$2 billion in public research. Institute funding programs require a 1:1 private investment match, and funded companies through June 30, 2014 raised in excess of \$35 million. The program has enabled entrepreneurs to raise over \$25 million in matching funds from high net worth individuals within the State of Florida, **inducing capital into Florida companies that may otherwise been invested outside of the state.** Funded companies raised over \$10 million from capital sources outside the State of Florida, showcasing investment opportunities that were previously "below the radar."
- The Institute's operations and the companies funded in the targeted industries of Florida, generate important economic impacts. Among these are the creation of High-Wage Employment, Household Income for Florida's working families, Gross Domestic Product (Value-Added) to the State's economy and other positive impacts that support the development of an innovation and knowledge-intensive Florida economy.

- Table ES-1 on the next page presents the growing and positive economic impacts of the Institute operations and the companies funded since FY 2010-2011.

Table ES-1. Summary of the Total Recurring Economic Impacts on Florida Arising from the Operations of the Institute and the Companies Funded

Impact on:	2011	2012	2013	2014	4-Year Total
Employment (Jobs)	91	211	343	683	1,329
Labor (Household) Income (\$ Million)	\$5	\$13	\$20	\$41	\$79
Gross Domestic Product (Value Added-\$ Million)	\$8	\$19	\$30	\$61	\$118
Federal State & Local Fiscal Revenues (\$ Million)	\$2	\$4	\$6	\$12	\$23
Total Economic Impact (\$ Million)	\$16	\$33	\$52	\$109	\$210

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

- The jobs supported by the Institute are primarily in sectors targeted for growth by the State's Economic Development Strategy. In the 2011-2014 period, 80 percent of the 1,329 jobs generated are in the Knowledge-Based Services industries¹ and in the Manufacturing sectors. These support the State's initiatives to create a leading 21st Century high-wage, high-skill economy.

Table ES-2. High-Wage Jobs Supported by the Operations of the Institute and the Companies Funded

Industry	2011	2012	2013	2014	4-Year Total
Knowledge-Based Services ¹	62	153	258	495	968
Manufacturing	10	18	23	57	107
Retail Trade	6	13	21	42	81
Visitor Industry	4	10	16	33	64
Wholesale Trade & Transportation Services	5	10	14	31	60
Government & Other	3	5	8	18	34
Construction	1	2	4	8	16
Total All Industries	91	211	344	683	1,329

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

¹Major industries under this category are: Software, Information Technologies, Life Sciences, Professional, Administrative Services and Arts, Entertainment & Recreation, among others.

- The Institute’s funding of promising startups also create significant intangible benefits to Florida that are not subject to quantification. Among these “externality benefits” to the State are:
 - Development of a globally competitive workforce,
 - Improvement in the business climate, and
 - Attracting and retaining talent.

- Still in its early years, the Institute is uncovering the vast potential that lies within Florida’s universities and research institutes, and identifying new company opportunities that are addressing some of today’s toughest healthcare and societal challenges. Its programs bridge knowledge and funding gaps at the early stages of company development, and incorporate members of the private sector to build the next generation of successful companies and entrepreneurs. Continuing to focus on new company creation, capitalization and growth will help to build Florida’s innovation economy, enhance Florida’s ability to compete in an increasing global economy, and yield economic development dividends for generations to come.

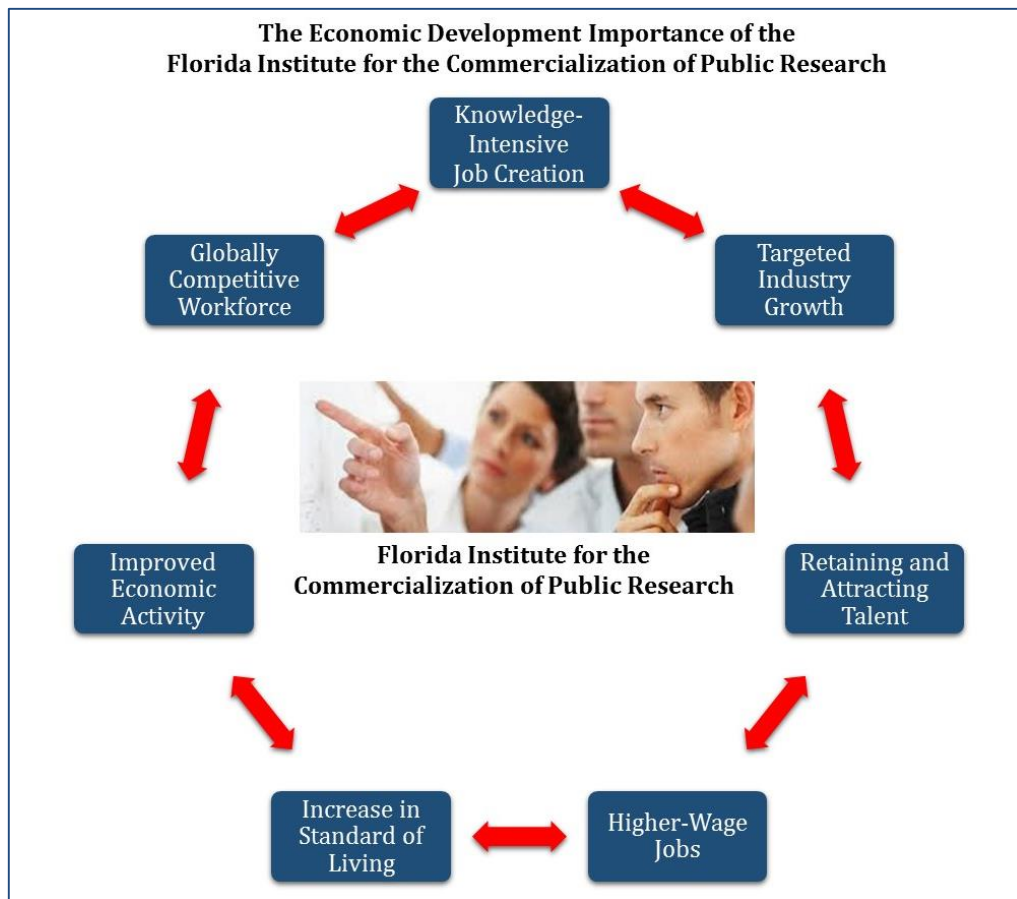
II. The Economic Development Importance of the Florida Institute for the Commercialization of Public Research

The Washington Economics Group, Inc. (WEG) was retained by the Florida Institute for the Commercialization of Public Research (“the Institute”) as independent consultants to estimate the economic development impacts to the State of Florida of the Institute’s activities. The Institute is a non-profit organization with an economic development mission through the commercialization of public research. The Institute works collaboratively with technology licensing officers at public and private universities and research institutions throughout the state, leveraging an estimated \$2 billion research base to start new companies and create jobs in industries targeted for growth by the State of Florida.

The success of the Institute is measured by the number of high-wage jobs and startup companies created, as well as the amount of capital invested into the new ventures. This Study not only quantifies the comprehensive economic impacts of the Institute’s success in the creation of jobs and businesses, but also highlights the importance of the Institute to the economic development strategy of the State of Florida. This includes an assessment of the Institute’s contributions toward creating high-wage and high-skill jobs, as well as supporting the development of new knowledge businesses in Florida’s targeted industries.

The economic development benefits to Florida extend beyond the quantifiable impacts estimated in the next sections of the Study. They also include *externality benefits* (intangible benefits) to Florida residents. The matrix on the following page summarizes the comprehensive benefits provided by the Institute’s activities, as well as the important role the Institute plays in the economic development of the State, creating knowledge-based and innovation-oriented industry clusters in high-wage, high-skill areas.





Source: The Washington Economics Group, Inc. (WEG)

The Institute works with its research partners to uncover commercially viable technologies and begin the company-building process. Recognizing that proper planning and execution in the early stages of company development improve the chances for future funding and growth, the Institute delivers value-added support services that help minimize risk and position companies for success. The Institute delivers both company building and funding programs to Florida's most promising entrepreneurs, specific elements of which include:

- identification of commercially-viable technologies,
- company formation and support,
- business and financial planning and modeling,
- management and capital attraction,
- leadership development and investor readiness,
- governance and compliance,
- strategic partnering, and
- seed funding.

The Institute is essential to the State’s economic development and its competitive positioning in the global marketplace, fulfilling a “niche” where seed capital is unlikely to be sufficiently available initially through the private marketplace.

The Institute is supported by a 26-member Investor Advisory Board comprised of distinguished investment professionals, primarily from venture capital firms across the United States. Members of the IAB evaluate companies for the Institute’s seed funding programs and advise entrepreneurs on matters relating to future fundraising and business development.

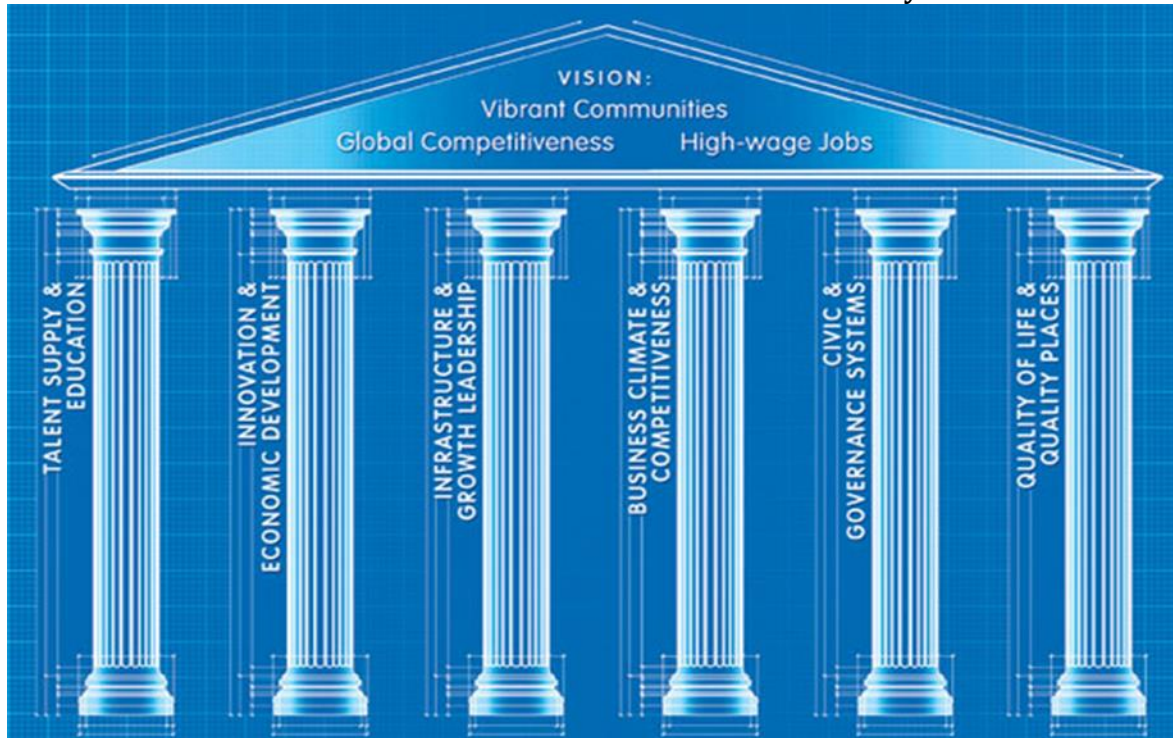
The following sections of the Study demonstrate the important and quantifiable impacts that the commercialization of new discoveries generated from publicly funded research has on the economy of Florida. In essence, it connects university innovators with the support and capital needed to grow a new enterprise from the initial stages of research and discovery to startup.

The jobs and companies created through the support of the Institute are in industries critical to the economic development strategy of the State, namely the generation of high-wage and high-skill jobs in 21st Century industries where knowledge and innovation are the principal inputs to the production process. These targeted industries include Aviation & Aerospace, CleanTech, Financial & Professional Services, Homeland Security & Defense, Information Technology, Life Sciences and Advanced Manufacturing.² The companies created through the support of the Institute are solving some of today’s toughest challenges and helping to define Florida’s innovative and globally competitive environment, thus advancing the high-wage, high skill economy of the 21st Century. There is strong and growing support across Florida for investments in innovations and new business. The Institute’s efforts encompass all six of the Pillars of Florida’s Future Economy as presented in the graph on the following page; these are:

- i. Talent Supply & Education,
- ii. Innovation & Economic Development,
- iii. Infrastructure & Growth Leadership,
- iv. Business Climate & Competitiveness,
- v. Civic & Governance Systems, and
- vi. Quality of Life & Quality Places.

² <http://www.enterpriseflorida.com/small-business/state-small-business-credit-initiative-ssbcj/>

The Six Pillars of Florida's Future Economy



Source: Florida Chamber of Commerce (<http://www.flchamber.com/six-pillars/overview/>).

Through the support of new company creation and by strengthening the collaboration among State, regional and local entities, the Florida Institute plays an important catalytic role in growing innovation and advancing the State's Plan for Economic Development.³ The future of Florida's economy in the 21st Century depends on its ability to compete globally through technology, innovation and knowledge. As such, the Institute contributes to the State's strategy to expand the number of Florida businesses operating internationally. Many Institute-supported startups have formed partnerships in international markets to further their commercialization efforts. Some of these include *Bing Energy*, *NanoPhotonica*, and *Spyglass Technologies*, each in targeted industries offering products catering to clean water and energy, nanotechnology and advanced materials.

The Institute's ongoing activities assist the State in competing in targeted industries, which consequentially retain and attract the human capital required for economic development. As such, the Institute has played a role in developing a science and technology cluster for the State. **Furthermore, it is important to highlight that the majority of these technology-**

³ http://sitefinity.floridajobs.org/Business/FL5yrPlan/FL_5yrEcoPlan.pdf

based types of jobs created by the commercialization of public research are high-wage and high-skill, thus advancing the standard of living of Florida residents.

The Institute connects the dots between world-class research, angel and venture capital investment communities, experienced CEOs and mentors, workforce boards, and regional public partners and is a catalyst for innovation-based economic development. The following are representative Institute companies as well as the products they are launching to address some of today's toughest healthcare and societal challenges:

- ***ClearSpec Medical***: Enables better physical examinations for women
- ***Biscayne Pharmaceuticals***: Develops novel drugs for cancer and other serious disorders
- ***Garmor***: Produces advanced materials that are low-cost and environmentally-friendly
- ***NeuroNet Learning***: Enhances the educational experience for children
- ***Powers Medical Devices***: Teaches premature infants how to feed
- ***Shadow Health***: Enhances the educational experience for allied health professionals
- ***Spyglass Technologies***: Ensures clean water
- ***Sun Biopharma***: Develops treatments pancreatic cancer
- ***Tapshield***: Improves emergency response systems
- ***TruVitals***: Monitors vital signs remotely in animals and humans
- ***Vigilant Biosciences***: Diagnoses oral cancer more effectively.

In conclusion, the combined efforts of the Institute's activities with public research institutions, as well as the leverage of State and private-investor funding, have strengthened the State's competitive standing in the global economy. **A strong economy, increased human capital and growing startups signal to investors an attractive location and business climate.** As such, investors, business owners, executives and researchers choose to locate to the State of Florida.

Institute funding programs require a 1:1 private investment match, and funded companies through June 30, 2014 raised in excess of \$35 million. The program has enabled entrepreneurs to raise over \$25 million in matching funds from high net worth individuals within the State of Florida, **inducing capital into Florida companies that may otherwise been invested outside of the State.**

The startups funded by the Institute have also had success in attracting private capital from outside the State. This plants the seeds for future growth of Florida and assists the State's efforts to position itself as a global hub for trade, visitors, talent, innovation and investment. For example, between 2011 and 2014, the companies funded by the Institute attracted \$10 million from capital sources outside of Florida, showcasing investment opportunities that were previously "below the radar," as well as an estimated \$23 million in Federal grants.

The following sections quantify the growing economic impacts of the Institute's activities over the past four years in expanding high-wage, high-skill employment that support the economic development strategy of the State.

III. The Recurring Economic Impacts of the Institute and the Companies Funded on the Economy of Florida are Significant and Growing



The operations of the Institute, combined with the economic activities of the startup companies funded to commercialize the research undertaken in Florida's institutions of higher education, generate significant and growing quantifiable economic impacts each year (see Appendix III for detailed Economic Impact Tables each year). The growing economic

impacts over time support the economic development strategy of Florida. The strategy's main goal is to create a high-skill, high-wage economy. The economic impacts, estimated by utilizing a professionally accepted and widely used methodology, support high-wage employment, the generation of Household Income, Economic Output and Public Revenues throughout Florida.

Methodology

Economic models that explicitly account for inter-industry linkages (supply relationships), the generation of labor and capital income and the spending of household income have been used since the 1960's to estimate the contribution that a particular business or industry makes to the general economy. These "input-output" models recognize that, as an industry experiences an increase in the demand for its products or services, it in turn needs more goods and services from its suppliers and must increase its purchases from other industries in the economy. The effect on regional production resulting from successive rounds of inter-industry linkages is referred to as the *indirect effect*. The resulting increases in regional production also lead to expansions in employment and labor income, and the increases in labor income lead to increases in consumer spending, further expanding sales and production throughout the regional economy. The latter economic impacts are referred to as the *induced effects*. The successive waves of production, spending and more production result in *economic multiplier effects*, where the final or total increase in regional production, income and employment, respectively, is larger than the initial (or "direct") increase in production, income and employment. The total quantitative economic contribution of these activities, therefore, is comprised of a *direct effect*, an *indirect effect* and an *induced effect*.

The IMPLAN Group, LLC. (IMPLAN) provides the software and basic data needed to formulate the economic multiplier model developed for this report. IMPLAN has been

providing economic multiplier models for regional economic impact analysis since 1985⁴. Models developed using IMPLAN software have been widely used by private sector, academic economists and by federal, state and local government agencies to measure the economic impacts of various policy alternatives.

The annually recurring operating expenditures of the Institute and the expenditures of the enterprises funded generate economic impacts that extend beyond those *directly* related to operations of the Institute and the individual companies. These “spillover” or multiplier impacts are the result of each business activity’s supply relationships with other firms operating within the State, the proportion of business value added⁵ that accrues to households in the form of labor and capital income, and the propensity of households to spend income on goods produced within the State. The *direct impact* of the Institute and the funded companies is comprised of all of the operating expenditures made by the Institute, and each of the companies that the Institute has funded. Information on these expenditures was provided by the Institute. Utilizing the *direct* economic impacts discussed above, *indirect* and *induced* economic impacts of these recurring operations were calculated using an extended *input-output* model of the State of Florida economy. These comprehensive *direct*, *indirect* and *induced* economic impacts were totaled and are summarized in Table 1 below.

Table 1. Summary of the Total Recurring Economic Impacts on Florida Arising from the Operations of the Institute and the Companies Funded

Impact on:	2011	2012	2013	2014	4-Year Total
Employment (Jobs)	91	211	343	683	1,329
Labor (Household) Income (\$ Million)	\$5	\$13	\$20	\$41	\$79
Gross Domestic Product (Value Added-\$ Million)	\$8	\$19	\$30	\$61	\$118
Federal State & Local Fiscal Revenues (\$ Million)	\$2	\$4	\$6	\$12	\$23
Total Economic Impact (\$ Million)	\$16	\$33	\$52	\$109	\$210

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

In FY 2010-2011, the Institute and funded companies’ operations supported 91 jobs throughout the State. Over time, as the Institute has matured, additional companies have been funded. The increase in funded companies has steadily expanded high-wage employment in Florida. **In 2014, a significant 683 high-wage jobs for Florida residents will be supported from the Institute’s activities.** The operations of the Institute and the

⁴Information on the IMPLAN Group, LLC models and the company history can be found at www.implan.com.

⁵“Value added” refers to the difference between business revenues and the cost of non-labor and non-capital inputs used to produce goods and/or services.

knowledge-intensive companies that it has funded are *directly* responsible for 298 jobs in the Knowledge-Based Services, Manufacturing and related support sectors. However, the *indirect* and *induced* job creation process reaches deeply into all sectors of the Florida economy. This dramatically demonstrates the close supply inter-relationships that the Knowledge-Based Services and Manufacturing sectors have with all of the other sectors of the State's economy. Currently, an additional 161 jobs are supported via *indirect* economic effects (mostly suppliers to the funded companies). Lastly, 224 jobs in all sectors of the Florida economy are attributable to *induced* spending effects throughout the State. Over a 4-year period, a cumulative total of 1,329 employment positions are supported by the Institute and its funded companies. (See Table D-1, page 40.)

Therefore, the total number of jobs, *directly*, *indirectly* and *induced*, supported by the operations of the Institute and the companies funded have increased from 91 in 2011 to 683 in 2014, making an important contribution to Florida employment opportunities now and in the future as the Institute's activities continue to expand.

A. High-Wage Jobs Supported by the Operations of the Institute and the Companies Funded are Growing at a Solid Pace

The number of Florida jobs created in each economic sector between 2011 and 2014 by the Institute and the companies funded are summarized in Table 2 below and Figure 1 on the next page. Of the 683 jobs currently supported in 2014, a significant 72 percent are in the Knowledge-Based Services sector, and 8 percent are in the Manufacturing sector. The remaining jobs are distributed throughout the other sectors of the Florida economy.

Table 2. High-Wage Jobs Supported by the Operations of the Institute and the Companies Funded

Industry	2011	2012	2013	2014	4-Year Total
Knowledge-Based Services*	62	153	258	495	968
Manufacturing	10	18	23	57	107
Retail Trade	6	13	21	42	81
Visitor Industry	4	10	16	33	64
Wholesale Trade & Transportation Services	5	10	14	31	60
Government & Other	3	5	8	18	34
Construction	1	2	4	8	16
Total All Industries	91	211	344	683	1,329

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

*Major industries under this category are: Software, Information Technologies, Life Sciences, Professional, Administrative Services and Arts, Entertainment & Recreation, among others.

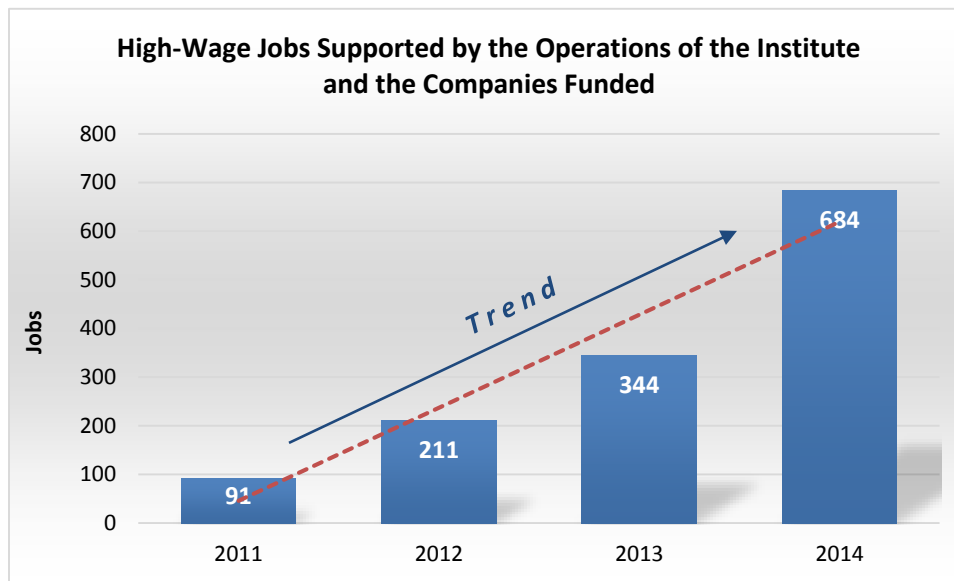


Figure 1.
Source: The Washington Economics Group, Inc. (WEG).

B. The Operations of the Institute and the Companies Funded Are Also an Important Generator of Household Income

The ongoing operations of the Institute and the companies funded are also an important generator of Household Income for the Florida labor force. At the outset of the Institute’s operations in FY 2010-2011, these activities generated over \$5 million in Household Income. As the Institute’s commercialization of public research has been successful, more companies have been funded, creating additional Household Income each year for Florida’s working households.

In 2014, over \$22 million of Household Income will be *directly* generated by the activities of the Institute and the companies funded. Additionally, close to \$9 million of Household Income is created by *indirect economic activities*, and another \$10 million is created by *induced economic activities*, for a total of almost \$41 million in 2014 - up sharply from \$5 million in 2011.

In summary, operations of the Institute and the companies capitalized generated almost \$79 million in Household Income between 2011 and 2014, with the largest proportion of income generated from the Knowledge-Based Services and Manufacturing economic sectors as shown in Table 3 on the next page. These two sectors (industries) are key targets for expansion by the State’s Economic Development Strategy.

Table 3. Household Income Created by the Operations of the Institute and the Companies Funded
(\$ Thousands)

Industry	2011	2012	2013	2014	4-Year Total
Knowledge-Based Services*	\$3,661	\$9,141	\$15,261	\$29,450	\$57,513
Manufacturing	826	1,509	1,918	4,797	9,050
Wholesale Trade & Transportation Services	323	621	905	2,029	3,878
Government & Other	268	496	716	1,636	3,116
Retail Trade	193	439	695	1,417	2,744
Visitor Industry	108	254	409	817	1,587
Construction	65	120	186	408	779
Total All Industries	\$5,444	\$12,580	\$20,090	\$40,554	\$78,667

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

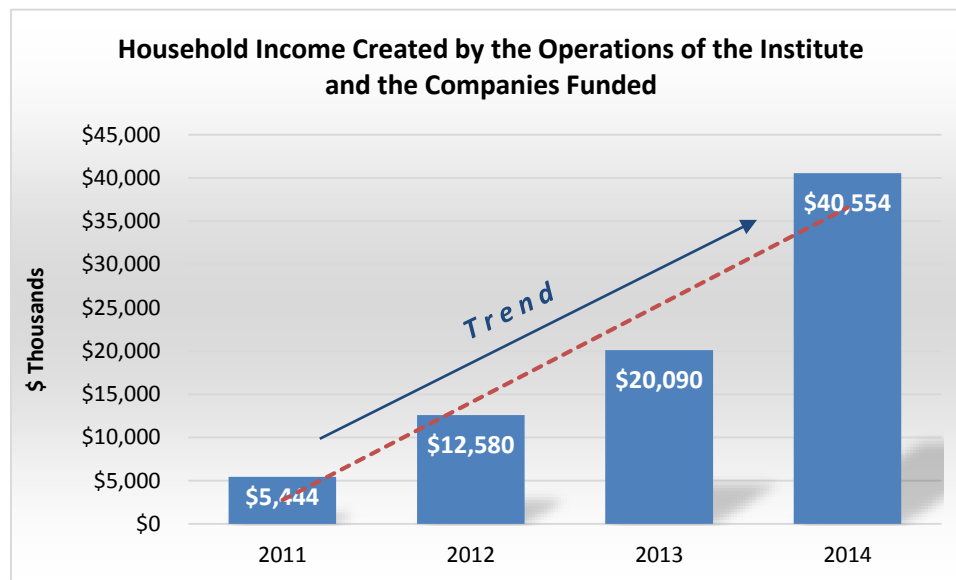


Figure 2.
Source: The Washington Economics Group, Inc. (WEG)

C. Gross Domestic Product (Value-Added) Impacts of the Ongoing Operations of the Institute and the Companies Funded are Growing Steadily

Gross Domestic Product (Value-Added) impacts arising from the ongoing operations of the Institute and the companies funded is another measure of economic

*Major industries under this category are: Software, Information Technologies, Life Sciences, Professional, Administrative Services and Arts, Entertainment & Recreation, among others.

development benefits to Florida. Value added is the portion of business revenues that is available to pay compensation to workers, capital income and indirect business taxes⁶. Value added is also the principal source of Household Income and a key measure of the contributions that the Institute makes each year to the Florida economy. In 2011, the Institute’s activities created just over \$8 million of value added. As the Institute has grown and additional companies were funded, the amounts of value added increased steadily each year.

By 2014, these ongoing operations are creating over \$29 million of value added *directly*, while an additional \$14 million of value added is created by *indirect* activities, and another close to \$18 million is created by *induced* economic activities. In total, ongoing operations of the Institute and the companies funded generate almost \$61 million in value added, contributing to the increases in State’s Gross Domestic Product (GDP). (See Table D-3, page 42.) Table 4 below and Figure 3 on the following page summarizes the value-added impacts associated with the Institute’s ongoing operations on each economic sector between 2011 and 2014.

The greatest increases in value added arise in the Knowledge-Based Services and the Manufacturing sectors where 84 percent of the value added is created, demonstrating the importance of the Institute in support of the State’s Economic Development Strategy.

Table 4. Gross Domestic Product (Value-Added) Impacts Arising from the Operations of the Institute and the Companies Funded (\$ Thousands)

Industry	2011	2012	2013	2014	4-Year Total
Knowledge-Based Services*	\$5,464	\$13,173	\$22,573	\$43,000	\$84,210
Manufacturing	1,286	2,449	3,129	7,710	14,575
Wholesale Trade & Transportation Services	548	1,042	1,510	3,410	6,509
Government & Other	420	796	1,175	2,629	5,019
Retail Trade	302	688	1,091	2,221	4,302
Visitor Industry	158	374	602	1,203	2,337
Construction	92	170	265	580	1,107
Total All Industries	\$8,270	\$18,692	\$30,345	\$60,753	\$118,059

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

⁶ Value added also includes compensation to government workers.

*Major industries under this category are: Software, Information Technologies, Life Sciences, Professional, Administrative Services and Arts, Entertainment & Recreation, among others.

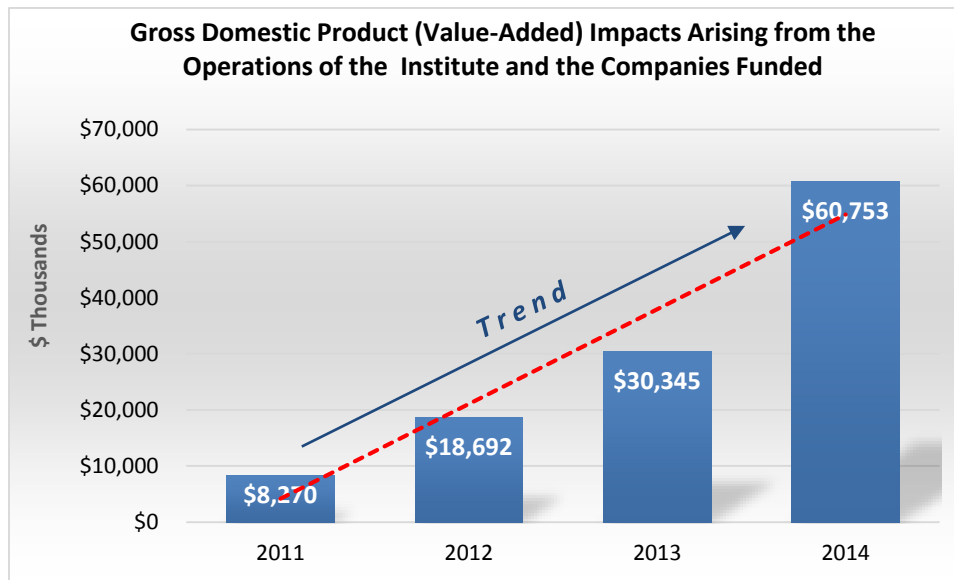


Figure 3.
Source: The Washington Economics Group, Inc. (WEG)

D. The Total Annual Economic Impact of the Ongoing Operations of the Institute and the Companies Funded Grow Each Year

A comprehensive measure of the **Total Economic Impact** of the Institute's ongoing operations and commercialization of public research is *Gross Economic Output*, representing the sum of gross revenues (receipts) of private firms plus the value of government services (valued at cost). At the outset of the Institute's activities in 2011 the Total Economic Impact of the Institute and the companies funded was almost \$16 million per year.

Over the past four years as the Institute has grown and funded additional companies the combination of the Institute growth and increases in funded companies has resulted in growing economic impacts each year. In 2014, the Total Economic Impact of these ongoing operations on the Florida economy is almost \$109 million. Over the 4-year period (2011-2014) the Total Economic Impact reached a significant \$210 million as shown in Table 5 and Figure 4 on the following page.

In 2014, almost \$59 million of the Total Economic Impact will be generated by *direct* activities, while an additional \$50 million will be generated by *indirect* and *induced* activities. (See Table D-4, page 43.) Table 5 on the next page shows the industry distribution of the Total Economic Impact for each year between 2011 and 2014, with Knowledge-Based Services and Manufacturing being the top sectors.

Table 5. Total Annual Economic Impact Arising from the Operations of the Institute and the Companies Funded (\$ Thousands)

Industry	2011	2012	2013	2014	4-Year Total
Knowledge-Based Services*	\$8,638	\$20,457	\$35,005	\$67,149	\$131,248
Manufacturing	4,596	7,965	10,094	25,671	48,326
Wholesale Trade & Transportation Services	876	1,678	2,442	5,489	10,485
Government & Other	669	1,266	1,866	4,182	7,983
Retail Trade	406	924	1,464	2,981	5,774
Visitor Industry	268	634	1,019	2,037	3,957
Construction	194	359	560	1,223	2,336
Total All Industries	\$15,646	\$33,283	\$52,450	\$108,732	\$210,109

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

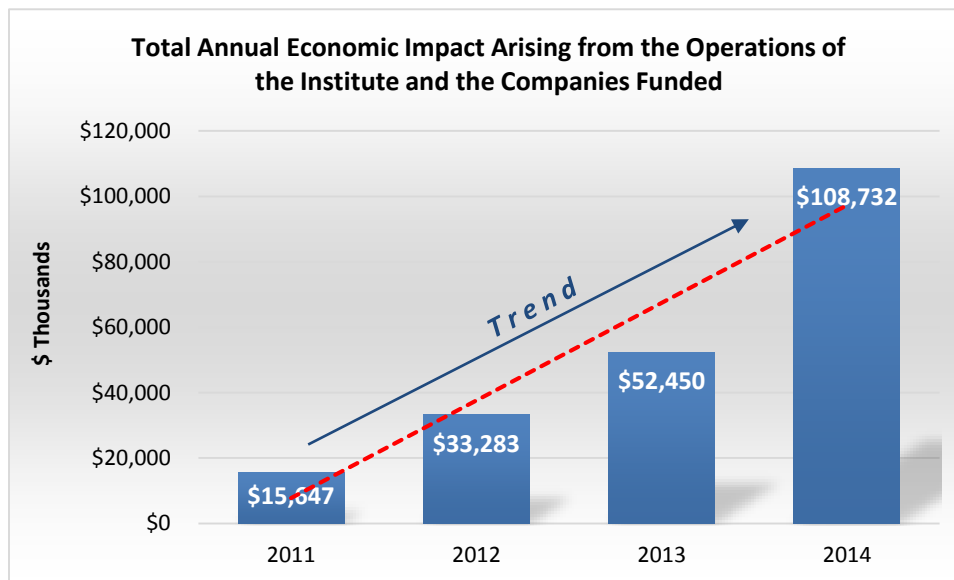


Figure 4.
Source: The Washington Economics Group, Inc. (WEG)

E. Fiscal Contributions Generated by the Increased Economic Activity of the Institute and the Companies Funded Have Grown Steadily Each Year

In addition to the principal economic impacts arising from the Institute’s activities and the companies funded, its ongoing operations have resulted in significant recurring Fiscal

*Major industries under this category are: Software, Information Technologies, Life Sciences, Professional, Administrative Services and Arts, Entertainment & Recreation, among others.

Revenues for Federal, State and Local governments as shown in Table 6 and Figure 5 that follow. At the start of the Institute’s activities in FY 2010-2011, their operations and funding activities generated close to \$2 million of the total Fiscal Revenues. As the Institute’s funding activities have expanded, additional companies have been created. The growing number of companies that the Institute has funded result in expanding Fiscal Revenues. **In 2014, almost \$12 million of Fiscal Revenues will be generated by the economic activities of the Institute and its funded companies.** This year, \$8 million, or 70 percent, of the Fiscal Revenues will flow to the Federal government, with the remaining close to \$4 million, or 30 percent, of tax revenues allocated to State and Local governments throughout the State. (See Table D-5, page 43.)

Table 6. Fiscal Contributions Arising from the Operations of the Institute and the Companies Funded (\$ Thousands)

Taxes Paid by:	2011	2012	2013	2014	4-Year Total
Labor	\$511	\$1,188	\$1,903	\$3,842	\$7,443
Capital	\$24	\$53	\$83	\$168	\$329
Indirect Business Taxes	\$490	\$1,077	\$1,714	\$3,509	\$6,790
Households	\$429	\$990	\$1,582	\$3,193	\$6,193
Corporations	\$169	\$364	\$617	\$1,206	\$2,356
Total	\$1,623	\$3,672	\$5,899	\$11,918	\$23,111

Table may not equal sum of all due to rounding. See Detailed Impact Tables in Appendix III.
Source: The Washington Economics Group, Inc. (WEG)

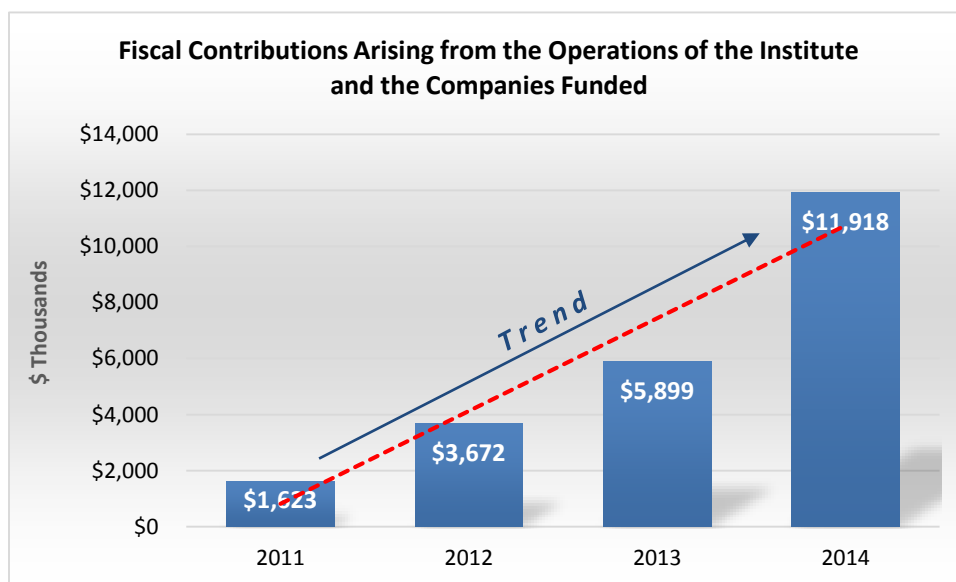


Figure 5.
Source: The Washington Economics Group, Inc. (WEG)

F. Conclusions

Still in its early years, the Institute is uncovering the vast potential that lies within Florida's universities and research institutes, and identifying new company opportunities that are addressing some of today's toughest healthcare and societal challenges. Its programs bridge knowledge and funding gaps at the early stages of company development, and incorporate members of the private sector to build the next generation of successful companies and entrepreneurs. Continuing to focus on new company creation, capitalization and growth will help to build Florida's innovation economy, enhance Florida's ability to compete in an increasing global economy, and yield economic development dividends for generations to come.

Appendix I:
Methodology

IMPLAN Model

The multiplier impacts calculated by the IMPLAN model are based on input-output methodology, which explicitly considers the inter-industry linkages that exist within an economy. Each industry needs labor and inputs from other industries in order to produce economic output. Whenever an industry experiences an increase in the demand for its output, many other industries within that economy indirectly experience an increase in demand as well because of these inter-industry linkages. This increase in demand that results from the need for material inputs is called the *indirect effects*. In addition, an increase in production within a region also leads to an increase in household income through the hiring of workers, which in turn generates further demands for goods and services within the region. Firms also need to expand their base of physical capital to meet higher levels of demand, and this too stimulates regional economic growth. The latter effects are referred to as *induced effects*. The inter-industry linkages and the induced effects on consumer and capital spending lead to successive rounds of production, and this process results in an increase in output that exceeds the initial change in demand, or a *multiplier effect*. Similarly, the increase in household income will exceed the initial payroll increase encountered in the industry that experienced the original increase in demand. The total change in employment in the regional economy is a multiple of the direct change in employment.

The following represents the system of equations that comprise the regional economy in an extended input-output model like IMPLAN:

$$\begin{aligned}
 x_1 &= a_{11}x_1 + a_{12}x_2 + a_{13}x_3 + \cdots + a_{1k}x_k + a_{1h}x_h + a_{1i}x_i + f_1 \\
 x_2 &= a_{21}x_1 + a_{22}x_2 + a_{23}x_3 + \cdots + a_{2k}x_k + a_{2h}x_h + a_{2i}x_i + f_2 \\
 x_3 &= a_{31}x_1 + a_{32}x_2 + a_{33}x_3 + \cdots + a_{3k}x_k + a_{3h}x_h + a_{3i}x_i + f_3 \\
 &\vdots \\
 x_k &= a_{k1}x_1 + a_{k2}x_2 + a_{k3}x_3 + \cdots + a_{kk}x_k + a_{kh}x_h + a_{ki}x_i + f_k \\
 x_h &= a_{h1}x_1 + a_{h2}x_2 + a_{h3}x_h + \cdots + a_{hk}x_k + a_{hh}x_h + a_{hi}x_i + f_h \\
 x_i &= a_{i1}x_1 + a_{i2}x_2 + a_{i3}x_h + \cdots + a_{ik}x_k + a_{ih}x_h + a_{ii}x_i + f_i
 \end{aligned}$$

The variables x_1 to x_k represent total production of output in each industry. The coefficients a_{ij} represent the purchases from industry “i” that are needed to produce a dollar of output in

industry “j”. These are known as the *direct requirement* coefficients. The variable x_h refers to household income and the coefficients a_{ih} refer to the average amount of household income spent on purchases from industry “i”, or the *average propensities to consume*. The coefficients a_{hi} are similar to the inter-industry purchases (a_{ij} 's), but they represent the household income that is generated from each dollar of output produced in industry “i”. Similarly the variable x_i represents regional spending on capital goods, and the coefficients a_{ij} represents the spending on capital goods for each dollar of output produced in industry “j”. The coefficients a_{ji} represent the amount purchased from industry “j” for each dollar spent on capital goods within the region. The variables f_j represent the exogenous final demand faced by each industry, respectively.

This system of equation reduces, using matrix notation, to the following solution for industry output and household income:

$$X = (I - A)^{-1} F$$

X is the vector of industry outputs plus household income and F is a vector of exogenous final demands. The “output multipliers” (i.e., the change in industry output and household income that results from a change in final demand for the output of a particular industry) are given in the columns of the $(I-A)^{-1}$ matrix. The IMPLAN software calculates these multipliers for counties, states and other sub-state regions. These multipliers can be used to provide a sense of the economic importance of an industry or an economic activity in a given region. The multipliers impacts for gross state product, labor and capital income and the government revenue impacts are derived from the basic output multipliers given by $(I-A)^{-1}$.

The IMPLAN model uses historical relationships between public-sector revenues and regional economic output in order to estimate the public-sector revenue impact resulting from the establishment of a new, or expansion of an existing economic activity.

Appendix II:
Economic Glossary

Definitions of Economic Terms Used in the Analysis	
<i>Employment</i>	Total of full-time or part-time jobs.
<i>Household (Labor) Income</i>	All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.
<i>Gross Domestic Product (Value Added)</i>	The increased value of a product as a result of the economic inputs (labor and capital) expended at a given stage. In the IMPLAN Model, GDP is the sum of: Employee Compensation, Proprietor Income, Other Property Type Income (Interest) and Indirect Business Taxes.
<i>Economic Impact</i>	Total value of all transactions attributed to an activity.
<i>Direct Effects</i>	The set of expenditures applied to the predictive model (i.e., I/O multipliers) for impact analysis. It is a series (or single) of production changes or expenditures made by producers/consumers as a result of an activity or policy. These initial changes are determined by an analyst to be a result of this activity or policy. Applying these initial changes to the multipliers in an IMPLAN model will then display how the region will respond, economically to these initial changes.
<i>Indirect Effects</i>	The impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to value added. The impacts are calculated by applying Direct Effects to the Type I Multipliers.
<i>Induced Effects</i>	The response by an economy to an initial change (direct effect) that occurs through re-spending of income received by a component of value added. IMPLAN's default multiplier recognizes that labor income (employee compensation and proprietor income components of value added) is not a leakage to the regional economy. This money is re-circulated through the household spending patterns causing further local economic activity.

**Appendix III:
Detailed Impact Tables**

Detailed Impact Tables

Within the main portion of the Study the economic impacts are presented at a summary level. *Direct, Indirect, and Induced* Impacts are aggregated into the Total Impact, and Industries are summarized by function. The following Tables present detailed impacts at the two-digit NAICS industry classification level. The following industry sector summarizations are used in this Study:

1. **Government & Other** is the sum of: Agriculture & Forestry, Mining, Utilities, Company Management and Government & Other.
2. **Knowledge-Based Services** is the sum of: Information, Finance & Insurance, Real Estate, Professional Services, Administrative, Educational Services, Health & Social Services, Arts, Entertainment & Recreation and Other Services.
3. **Wholesale Trade & Transportation Services** is the sum of: Wholesale Trade and Transportation & Warehousing.
4. The **Accommodation and Food Services** sector was renamed **Visitor Industry**.

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Economic Impact Tables – FY 2010-2011

Table A-1. High Wage Jobs Supported by the Operations of the Institute and the Companies Funded in FY 2010-2011

Industry	Impacts			
	Direct	Indirect	Induced	Total
Agriculture & Forestry	0.0	0.1	0.1	0.2
Mining	0.0	0.1	0.0	0.1
Utilities	0.0	0.1	0.1	0.2
Construction	0.0	1.1	0.2	1.3
Manufacturing	9.0	0.5	0.4	9.8
Wholesale Trade	0.0	2.1	0.9	3.0
Retail Trade	0.0	0.5	5.2	5.7
Transportation & Warehousing	0.0	1.1	0.8	1.9
Information	8.0	0.8	0.5	9.3
Finance & Insurance	0.0	1.7	2.5	4.2
Real Estate	0.0	1.2	1.6	2.8
Professional Services	19.0	5.0	1.4	25.4
Company Management	0.0	1.6	0.2	1.8
Administrative	0.0	5.5	1.7	7.2
Educational Services	0.0	0.1	1.1	1.1
Health & Social Services	0.0	0.0	5.9	5.9
Arts, Entertainment & Recreation	0.0	0.3	1.0	1.2
Accommodation & Food Services	0.0	1.1	3.3	4.3
Other Services	1.0	1.0	2.9	4.9
Government & Other	0.0	0.2	0.3	0.6
Total:	37	24	30	91

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table A-2. Household Income Created by the Operations of the Institute and the Companies Funded FY 2010-2011 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$2	\$5	\$8
Mining	0	1	1	2
Utilities	0	10	10	20
Construction	0	55	10	65
Manufacturing	775	30	21	826
Wholesale Trade	0	161	72	234
Retail Trade	0	16	177	193
Transportation & Warehousing	0	54	35	89
Information	496	57	36	589
Finance & Insurance	0	99	149	248
Real Estate	0	29	37	66
Professional Services	1,518	339	90	1,947
Company Management	0	177	17	194
Administrative	0	168	55	223
Educational Services	0	2	37	39
Health & Social Services	0	0	326	326
Arts, Entertainment & Recreation	0	10	31	41
Accommodation & Food Services	0	27	81	108
Other Services	48	47	87	182
Government & Other	0	20	25	44
Total	\$2,838	\$1,303	\$1,302	\$5,444

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table A-3. Gross Domestic Product (Value-Added) Impacts Generated by the Operations of the Institute and the Companies Funded FY 2010-2011 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$3	\$10	\$13
Mining	0	3	1	4
Utilities	0	63	61	124
Construction	0	76	16	92
Manufacturing	1,201	47	39	1,286
Wholesale Trade	0	295	133	428
Retail Trade	0	24	278	302
Transportation & Warehousing	0	73	47	120
Information	877	132	94	1,103
Finance & Insurance	0	181	247	428
Real Estate	0	183	517	701
Professional Services	1,722	460	124	2,306
Company Management	0	212	21	233
Administrative	0	195	65	260
Educational Services	0	2	42	44
Health & Social Services	0	0	365	365
Arts, Entertainment & Recreation	0	13	45	59
Accommodation & Food Services	0	39	119	158
Other Services	46	52	99	198
Government & Other	0	21	26	46
Total	\$3,846	\$2,074	\$2,349	\$8,270

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table A-4. Total Annual Economic Impact Generated by the Operations of the Institute and the Companies Funded in FY 2010-2011 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$7	\$18	\$24
Mining	0	15	7	22
Utilities	0	87	84	171
Construction	0	161	33	194
Manufacturing	4,262	176	159	4,596
Wholesale Trade	0	444	199	643
Retail Trade	0	32	373	406
Transportation & Warehousing	0	141	92	234
Information	1,307	269	181	1,757
Finance & Insurance	0	335	485	819
Real Estate	0	225	674	899
Professional Services	2,899	649	167	3,715
Company Management	0	336	33	369
Administrative	0	303	100	403
Educational Services	0	3	65	68
Health & Social Services	0	0	566	566
Arts, Entertainment & Recreation	0	20	68	88
Accommodation & Food Services	0	67	201	268
Other Services	83	80	160	323
Government & Other	0	34	48	82
Total	\$8,551	\$3,383	\$3,713	\$15,646

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table A-5. Fiscal Contributions Attributed to the Operations of the Institute and the Companies Funded in FY 2010-2011 (\$ Thousands)

Taxes Paid by:	Federal Taxes	State/Local Taxes	Total Taxes
Labor	\$501	\$10	\$511
Capital	\$24	\$0	\$24
Indirect Business Taxes	\$58	\$432	\$490
Households	\$394	\$35	\$429
Corporations	\$150	\$19	\$169
Total	\$1,126	\$496	\$1,623

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Economic Impact Tables – FY 2011-2012

Table B-1. High Wage Jobs Supported by the Operations of the Institute and the Companies Funded in FY 2011-2012

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	0	0	0	1
Mining	0	0	0	0
Utilities	0	0	0	0
Construction	0	2	1	2
Manufacturing	16	1	1	18
Wholesale Trade	0	3	2	6
Retail Trade	0	1	12	13
Transportation & Warehousing	0	2	2	4
Information	23	2	1	26
Finance & Insurance	0	4	6	10
Real Estate	0	3	4	6
Professional Services	50	11	3	64
Company Management	0	3	0	3
Administrative	0	11	4	15
Educational Services	0	0	2	3
Health & Social Services	0	0	14	14
Arts, Entertainment & Recreation	0	1	2	3
Accommodation & Food Services	0	3	8	10
Other Services	4	2	7	13
Government & Other	0	1	1	1
Total:	93	49	70	211

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table B-2. Household Income Created by the Operations of the Institute and the Companies Funded in FY 2011-2012 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$4	\$13	\$16
Mining	0	2	1	4
Utilities	0	19	23	42
Construction	0	96	24	120
Manufacturing	1,400	60	49	1,509
Wholesale Trade	0	264	168	432
Retail Trade	0	30	409	439
Transportation & Warehousing	0	108	81	189
Information	1,427	131	83	1,641
Finance & Insurance	0	226	344	569
Real Estate	0	63	86	149
Professional Services	3,955	711	209	4,875
Company Management	0	295	40	336
Administrative	0	349	127	476
Educational Services	0	7	85	92
Health & Social Services	0	0	754	754
Arts, Entertainment & Recreation	0	24	71	95
Accommodation & Food Services	0	67	187	254
Other Services	193	98	200	491
Government & Other	0	41	57	98
Total	\$6,975	\$2,594	\$3,010	\$12,579

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table B-3. Gross Domestic Product (Value-Added) Impacts Generated by the Operations of the Institute and the Companies Funded in FY 2011-2012 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$5	\$22	\$27
Mining	0	5	2	7
Utilities	0	117	142	259
Construction	0	133	37	170
Manufacturing	2,265	95	90	2,449
Wholesale Trade	0	484	307	790
Retail Trade	0	45	643	688
Transportation & Warehousing	0	145	108	252
Information	2,522	310	218	3,050
Finance & Insurance	0	416	571	987
Real Estate	0	398	1,196	1,594
Professional Services	4,125	971	288	5,383
Company Management	0	354	48	403
Administrative	0	403	150	553
Educational Services	0	8	97	105
Health & Social Services	0	0	844	844
Arts, Entertainment & Recreation	0	31	105	136
Accommodation & Food Services	0	99	275	374
Other Services	184	108	230	522
Government & Other	0	41	59	100
Total	\$9,096	\$4,167	\$5,430	\$18,693

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table B-4. Total Annual Economic Impact Generated by the Operations of the Institute and the Companies Funded in FY 2011-2012 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$11	\$41	\$52
Mining	0	26	16	42
Utilities	0	162	195	356
Construction	0	282	77	359
Manufacturing	7,257	340	367	7,965
Wholesale Trade	0	727	461	1,188
Retail Trade	0	61	863	924
Transportation & Warehousing	0	277	213	491
Information	3,759	631	419	4,809
Finance & Insurance	0	770	1,120	1,890
Real Estate	0	488	1,557	2,045
Professional Services	6,580	1,359	385	8,324
Company Management	0	561	76	637
Administrative	0	618	231	849
Educational Services	0	11	150	162
Health & Social Services	0	0	1,308	1,308
Arts, Entertainment & Recreation	0	47	156	203
Accommodation & Food Services	0	168	466	634
Other Services	330	166	369	866
Government & Other	0	68	111	179
Total	\$17,926	\$6,774	\$8,582	\$33,282

Note: Total may not equal the sum of all due to rounding.

Source: The Washington Economics Group, Inc. (WEG)

Table B-5. Fiscal Contributions Attributed to the Operations of the Institute and the Companies Funded in FY 2011-2012 (\$ Thousands)

Taxes Paid by:	Federal Taxes	State/Local Taxes	Total Taxes
Labor	\$1,164	\$24	\$1,188
Capital	\$53	\$0	\$53
Indirect Business Taxes	\$126	\$951	\$1,077
Households	\$909	\$81	\$990
Corporations	\$324	\$40	\$364
Total	\$2,577	\$1,096	\$3,672

Note: Total may not equal the sum of all due to rounding.

Source: The Washington Economics Group, Inc. (WEG)

Economic Impact Tables – FY 2012-2013

Table C-1. High-Wage Jobs Supported by the Operations of the Institute and the Companies Funded in FY 2012-2013

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	0	0	1	1
Mining	0	0	0	0
Utilities	0	0	0	1
Construction	0	3	1	4
Manufacturing	20	1	1	23
Wholesale Trade	0	4	3	8
Retail Trade	0	1	19	21
Transportation & Warehousing	0	4	3	6
Information	53	3	2	58
Finance & Insurance	0	6	9	16
Real Estate	0	5	6	11
Professional Services	73	17	5	95
Company Management	0	4	1	4
Administrative	0	18	6	25
Educational Services	0	0	4	4
Health & Social Services	0	0	22	22
Arts, Entertainment & Recreation	0	1	4	5
Accommodation & Food Services	0	4	12	16
Other Services	9	4	11	23
Government & Other	0	1	1	2
Total:	155	77	111	343

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table C-2. Household Income Created by the Operations of the Institute and the Companies Funded in FY 2012-2013 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$6	\$20	\$26
Mining	0	3	2	5
Utilities	0	29	37	66
Construction	0	148	38	186
Manufacturing	1,753	87	78	1,918
Wholesale Trade	0	340	268	608
Retail Trade	0	42	653	695
Transportation & Warehousing	0	168	129	297
Information	3,288	229	133	3,650
Finance & Insurance	0	379	549	928
Real Estate	0	108	137	245
Professional Services	5,778	1,132	334	7,244
Company Management	0	396	64	460
Administrative	0	564	203	768
Educational Services	0	14	136	150
Health & Social Services	0	0	1,205	1,205
Arts, Entertainment & Recreation	0	39	114	153
Accommodation & Food Services	0	109	299	409
Other Services	435	165	319	919
Government & Other	0	68	91	159
Total	\$11,254	\$4,028	\$4,809	\$20,091

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table C-3. Gross Domestic Product (Value-Added) Impacts Generated by the Operations of the Institute and the Companies Funded in FY 2012-2013 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$8	\$35	\$43
Mining	0	7	3	11
Utilities	0	182	226	408
Construction	0	207	59	265
Manufacturing	2,850	135	144	3,129
Wholesale Trade	0	623	490	1,113
Retail Trade	0	63	1,028	1,091
Transportation & Warehousing	0	225	172	397
Information	5,811	551	348	6,711
Finance & Insurance	0	700	913	1,613
Real Estate	0	674	1,910	2,584
Professional Services	6,066	1,549	459	8,074
Company Management	0	475	77	552
Administrative	0	650	239	889
Educational Services	0	16	156	172
Health & Social Services	0	0	1,348	1,348
Arts, Entertainment & Recreation	0	51	168	218
Accommodation & Food Services	0	163	439	602
Other Services	415	183	367	965
Government & Other	0	67	95	161
Total	\$15,142	\$6,528	\$8,675	\$30,345

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table C-4. Total Annual Economic Impact Generated by the Operations of the Institute and the Companies Funded in FY 2012-2013 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$17	\$65	\$82
Mining	0	37	26	63
Utilities	0	249	311	560
Construction	0	437	123	560
Manufacturing	9,024	483	586	10,094
Wholesale Trade	0	936	736	1,672
Retail Trade	0	86	1,378	1,464
Transportation & Warehousing	0	429	341	770
Information	8,661	1,128	669	10,459
Finance & Insurance	0	1,296	1,789	3,085
Real Estate	0	827	2,488	3,315
Professional Services	9,714	2,155	616	12,485
Company Management	0	752	122	874
Administrative	0	994	370	1,364
Educational Services	0	24	240	264
Health & Social Services	0	1	2,090	2,090
Arts, Entertainment & Recreation	0	78	250	328
Accommodation & Food Services	0	275	744	1,019
Other Services	743	281	590	1,614
Government & Other	0	110	178	287
Total	\$28,143	\$10,595	\$13,711	\$52,448

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table C-5. Fiscal Contributions Attributed to the Operations of the Institute and the Companies Funded in FY 2012-2013 (\$ Thousands)

Taxes Paid by:	Federal Taxes	State/Local Taxes	Total Taxes
Labor	\$1,864	\$39	\$1,903
Capital	\$83	\$0	\$83
Indirect Business Taxes	\$201	\$1,513	\$1,714
Households	\$1,452	\$129	\$1,582
Corporations	\$549	\$69	\$617
Total	\$4,150	\$1,749	\$5,899

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Economic Impact Tables – FY 2013-2014

Table D-1. High-Wage Jobs Supported by the Operations of the Institute and the Companies Funded in FY 2013-2014

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	0	1	1	2
Mining	0	0	0	1
Utilities	0	0	1	1
Construction	0	7	2	8
Manufacturing	51	3	3	57
Wholesale Trade	0	11	7	18
Retail Trade	0	3	39	42
Transportation & Warehousing	0	8	6	13
Information	89	6	4	99
Finance & Insurance	0	12	19	31
Real Estate	0	9	12	21
Professional Services	149	35	10	194
Company Management	0	9	1	10
Administrative	0	37	13	50
Educational Services	0	0	8	8
Health & Social Services	0	0	44	44
Arts, Entertainment & Recreation	0	2	7	9
Accommodation & Food Services	0	8	24	33
Other Services	9	7	21	38
Government & Other	0	2	2	4
Total:	298	161	224	683

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table D-2. Household Income Created by the Operations of the Institute and the Companies Funded in FY 2013-2014 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$13	\$40	\$53
Mining	0	8	4	12
Utilities	0	64	75	138
Construction	0	331	77	408
Manufacturing	4,445	195	157	4,797
Wholesale Trade	0	871	540	1,411
Retail Trade	0	98	1,319	1,417
Transportation & Warehousing	0	358	261	618
Information	5,522	440	268	6,229
Finance & Insurance	0	730	1,107	1,838
Real Estate	0	212	276	488
Professional Services	11,869	2,349	674	14,893
Company Management	0	982	130	1,112
Administrative	0	1,151	410	1,561
Educational Services	0	16	274	290
Health & Social Services	0	0	2,432	2,433
Arts, Entertainment & Recreation	0	77	229	306
Accommodation & Food Services	0	213	604	817
Other Services	435	334	645	1,414
Government & Other	0	137	184	321
Total	\$22,271	\$8,577	\$9,706	\$40,554

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table D-3. Gross Domestic Product (Value-Added) Impacts Generated by the Operations of the Institute and the Companies Funded in FY 2013-2014 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$18	\$71	\$89
Mining	0	17	7	24
Utilities	0	399	456	855
Construction	0	462	118	580
Manufacturing	7,116	304	290	7,710
Wholesale Trade	0	1,594	989	2,583
Retail Trade	0	147	2,074	2,221
Transportation & Warehousing	0	479	348	827
Information	9,758	1,047	703	11,508
Finance & Insurance	0	1,359	1,842	3,201
Real Estate	0	1,330	3,856	5,186
Professional Services	12,144	3,205	927	16,276
Company Management	0	1,178	155	1,334
Administrative	0	1,329	483	1,812
Educational Services	0	19	314	333
Health & Social Services	0	1	2,720	2,721
Arts, Entertainment & Recreation	0	99	339	437
Accommodation & Food Services	0	317	887	1,203
Other Services	415	372	740	1,527
Government & Other	0	138	191	329
Total	\$29,433	\$13,811	\$17,509	\$60,753

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table D-4. Total Annual Economic Impact Generated by the Operations of the Institute and the Companies Funded in FY 2013-2014 (\$ Thousands)

Industry	Impacts			Total
	Direct	Indirect	Induced	
Agriculture & Forestry	\$0	\$40	\$131	\$170
Mining	0	87	52	139
Utilities	0	548	628	1,176
Construction	0	975	249	1,223
Manufacturing	23,384	1,104	1,183	25,671
Wholesale Trade	0	2,396	1,486	3,881
Retail Trade	0	199	2,782	2,981
Transportation & Warehousing	0	920	688	1,608
Information	14,545	2,139	1,351	18,034
Finance & Insurance	0	2,498	3,611	6,109
Real Estate	0	1,632	5,023	6,654
Professional Services	19,938	4,487	1,243	25,667
Company Management	0	1,865	246	2,111
Administrative	0	2,046	746	2,792
Educational Services	0	28	485	513
Health & Social Services	0	1	4,218	4,219
Arts, Entertainment & Recreation	0	153	504	657
Accommodation & Food Services	0	536	1,501	2,037
Other Services	743	571	1,191	2,504
Government & Other	0	227	359	586
Total	\$58,610	\$22,448	\$27,675	\$108,732

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Table D-5. Fiscal Contributions Attributed to the Operations of the Institute and the Companies Funded in FY 2013-2014 (\$ Thousands)

Taxes Paid by:	Federal Taxes	State/Local Taxes	Total Taxes
Labor	\$3,764	\$78	\$3,842
Capital	\$168	\$0	\$168
Indirect Business Taxes	\$412	\$3,097	\$3,509
Households	\$2,931	\$261	\$3,193
Corporations	\$1,072	\$134	\$1,206
Total	\$8,347	\$3,570	\$11,917

Note: Total may not equal the sum of all due to rounding.
Source: The Washington Economics Group, Inc. (WEG)

Appendix IV:
The Washington Economics Group, Inc.
Project Team and Qualifications



J. ANTONIO VILLAMIL
Founder and Principal

Tony Villamil is a nationally recognized economist, with over thirty-five years of successful career as a business economist, university educator and high-level policymaker for both federal and state governments. He was appointed by President George H. W. Bush as US Undersecretary of Commerce for Economic Affairs, receiving full US Senate confirmation of the Presidential appointment. Tony is the Founder and Principal of a successful economic consulting practice, The Washington Economics Group, Inc. (WEG), a Florida-based firm established in 1993 upon his return to the State from his public service in Washington, D.C.

Dr. Villamil is the immediate past Chairman of the Governor’s Council of Economic Advisors of Florida, and during 1999-2000, he was selected by Governor Bush as his first Director for Tourism, Trade and Economic Development. Presently, he is on the Board of Directors of the Spanish Broadcasting System (SBS), Mercantil Commercebank, NA, and Pan-American Life Insurance Group (PALIG). He was most recently appointed by the US Secretary of Commerce to serve in the Florida District Export Council.

Among other professional and civic leadership positions, Tony was selected in 2008 as the founding Dean of the School of Business of St. Thomas University, serving successfully until December 31st, 2013 at which time he resigned to return full time to his growing economic consulting practice. He is currently Chairman of the Economic Roundtable of the Beacon Council—Miami-Dade County’s official economic development organization. Dr. Villamil is also Senior Research Fellow of Florida TaxWatch, an established fiscal and policy research organization of the State.

Tony earned bachelor and master degrees in Economics from Louisiana State University (LSU), where he also completed coursework for the PhD degree. In 1991, Florida International University (FIU) awarded him a doctoral degree in Economics (hc), for “distinguished contributions to the Nation in the field of economics.” He frequently speaks to business, government and university audiences on economic topics.

Dr. Villamil is resident of Coral Gables, Florida, where he lives with his family, traveling frequently throughout Florida, the US and globally to conduct research and presentations for clients of the Washington Economics Group.



CHARLES K. YAROS
Associate Consultant for Economics

Chuck Yaros is an Associate Consultant for Economics at The Washington Economics Group, Inc. (WEG). He serves as economic consultant in the areas of financial economics and economic impact studies. Prior to joining WEG he was a Vice President and Portfolio Strategist at Shay Financial Services in Miami where he specialized in developing, implementing and managing interest rate risk and capital optimization strategies for financial institutions.

Mr. Yaros has over 20 years of experience as a business and financial economist, having worked in a number of positions of progressive responsibility in the South Florida business community. Additionally, he has spoken and taught courses on financial risk management.

Chuck received his undergraduate degree in Economics with Honors from Trinity College and his Master's degree in Economics from Duke University, where he also completed course work for the Ph.D. degree. Chuck and his family are residents of Coral Gables, Florida.



VERITY FINCH
Manager of Client Services

Verity Finch is the Manager of Client Services at The Washington Economics Group, Inc. (WEG). She serves as WEG's client liaison, working with clients to facilitate their business interests and achieve their goals through exclusive economics and market research advisor services.

Verity began her career in England as a data analyst at Equity Insurance Group, an international specialist motor insurer. Most recently, she served as Assistant for marketing and research to J. Antonio Villamil in his former role as Dean at St. Thomas University, School of Business. In her role in the Dean's Office at St. Thomas University, Verity served as the coordinator of the Business Executives Advisory Council, managed the successful Entrepreneurship Week Program in liaison with executives and faculty, and conducted numerous research and marketing assignments.

Verity is recognized for her leadership, serving as President of the Business Club of St. Thomas University and as a speaker on business and women career issues.

Verity received her Master of Business Administration (MBA) degree from St. Thomas University in Miami, and holds a first-class Law Degree (LLB) from Anglia Ruskin University, School of Law, in England.



HAYDEE M. CARRION
Executive and Senior Research Assistant

Haydee M. Carrion has been Executive Assistant to Dr. Villamil since the firm's founding in 1993. She has senior level expertise in multi-media presentations and in the preparation and design of complex reports and documents for clients, utilizing the latest technologies

In 2012, WEG promoted her to Senior and Project Research Assistant to the firm, given outstanding performance in web-based research and in assistance to the firm's Principal in the preparation of audio-visual presentations for clients and in desktop publishing. Ms. Carrion is fluent in Spanish, with experience in the preparation of economics and business documents in the language.

Ms. Carrion has been with WEG for 19 years. Ms. Carrion holds degrees in Business Administration and Office System Technologies from Miami-Dade College.

The Washington Economics Group, Inc. (WEG) has been successfully meeting client objectives since 1993 through economic consulting services for corporations, institutions and governments of the Americas. We have the expertise, high-level contacts, and business alliances to strengthen your competitive positioning in the growing marketplaces of Florida and Latin America.

Our roster of satisfied clients, over the past 20 years, includes multinational corporations, financial institutions, public entities, and non-profit associations expanding their operations in the Americas.

EXCLUSIVE CONSULTING APPROACH:

Each client is unique to us. We spend considerable time and effort in understanding the operations, goals, and objectives of clients as they seek our consulting and strategic advice. We are not a mass-production consulting entity nor do we accept every project that comes to us. We engage a limited number of clients each year that require customized consulting services in our premier areas of specialization. These premier and exclusive services are headed by former U.S. Under Secretary of Commerce, Dr. J. Antonio Villamil, with over thirty-five years of experience as a business executive and as a senior public official of the U.S. and most recently of Florida.

PREMIER CONSULTING SERVICES:

Comprehensive Corporate Expansion Services. Our seamless and customized service includes site selection analysis, development of incentive strategies and community and governmental relations.

Economic Impact Studies highlight the importance of a client's activities in the generation of income, output and employment in the market area serviced by the entity. These studies are also utilized to analyze the impact of public policies on key factors that may affect a client's activities such as tax changes, zoning, environmental permits and others.

Strategic Business Development Services. These services are customized to meet client objectives, with particular emphasis in the growing marketplaces of Florida, Mexico, Central and South America. Recent consulting assignments include customized marketing strategies, country risk assessments for investment decisions and corporate spokesperson activities and speeches on behalf of the client at public or private meetings.

For a full description of WEG capabilities and services, please visit our website at:

www.weg.com

The Washington Economics Group, Inc.
Representative Client List 1993-2014

Multinational Corporations

ALSTOM	Lucent Technologies
Ameritech International	MasterCard International
Bureau Veritas (BIVAC)	MediaOne/AT&T
Carrier	Medtronic
Esso Inter-America	Merck Latin America
FedEx Latin America	Microsoft Latin America
Genting Group	Motorola
Hyatt	Phelps Dodge
IBM	SBC Communications
Joseph E. Seagram & Sons, Inc. (Vivendi)	Telefonica Data Systems
KPMG	Visa International
Lockheed Martin	

Construction and Real Estate Development Firms

Areas USA, Inc.	Landstar Development
Barron Collier Companies	LXR Luxury Resorts
Berkowitz Development Group	Miami Asset Management Company, Inc.
Boca Developers	Miapolis, LLC
CDS International	Odebrecht Construction, Inc.
Century Homebuilders	Palazzo Las Olas Group, LLC
Codina Realty	The Allen Morris Company
Empire World Towers, LLC	The Related Group, Inc.
Ferro Investment Group, LLC	The Rouse Company
Flagler Development	The St. Joe Company
Florida East Coast Realty Inc.	Trammel Crow Company
Inland Port Systems, LLC	WCI Development Companies

Engineering, Planning and Design Firms

AECOM (DMJM Harris)	HNTB
Atkins (PBSJ)	Kimley-Horn and Associates
CDM Smith (Wilbur Smith Associates)	Parsons Brincherhoff
Golder Associates	

College and Universities

Alabama State University	Rocky Mountain College of Art and Design
Barry University	Sistema Universitario Ana G. Méndez
Embry-Riddle Aeronautical University	St. Thomas University
Florida Agricultural & Mechanical University	Universidad Politécnica de Puerto Rico
Florida International University	University of Florida
Full Sail University	University of Miami
Keiser University	UM's Rosenstiel School of Marine and Atmospheric Science
Los Angeles Film School	University of South Florida/ENLACE
Miami-Dade College	

Law Firms

Becker & Poliakoff	Gloria Roa Bodin, Esq.
Carlton Fields	Greenberg Traurig, LLP
Colson Hicks Eidson	Holland & Knight, LLP
DLA Piper	Steel Hector & Davis
Dunbar & Dunbar	Tew Cardenas, LLP

Financial Institutions

ABN-AMRO Bank	Hemisphere National Bank
Advantage Capital	HSBC/Marine Midland
Allen & Company	International Bank of Miami (First United Bank)
BNP Paribas	Lazard Freres & Co.
Bank Atlantic Corp.	Mercantil Commercebank N.A.
BankUnited, FSB	Pan American Life Insurance Group
Banque Nationale de Paris	PointeBank, N.A.
Barclays Bank	Seitlin Insurance
ESJ Capital Partners	Sun Trust Corporation
Espirito Santo Bank	The Equitable/AXA Advisors
Fiduciary Trust International	Union Planters Bank of Florida (Regions)
First Union National Bank (Wells Fargo)	

The Comprehensive Economic Development Impacts
of the Florida Institute for the Commercialization of Public Research to the State of Florida

Florida-Based Companies

All Aboard Florida	Iberia Tiles
AmericanAirlines Arena	International Speedway Corporation
BMI Companies	Jungle Island
Communikat	Lake Nona
Daytona International Speedway	Mercy Hospital
Dosal Tobacco	Miami Dolphins
Farm Stores	Palm Beach Premier
Fishkind & Associates	Resorts World Miami (RWM)
Florida Hospital	Ron Sachs Communications
Florida Marlins	Sprint of Florida
Florida Power & Light	Technology Foundation of the Americas
Flo-Sun Sugar Corp.	The Biltmore Hotel
Greater Miami Convention & Visitors Bureau	The Heat Group
Greater Ft. Lauderdale Alliance	Ultra Musical Festival
Homestead Miami Speedway	

Non-Florida-Based Institutions

Darlington Raceway	Richmond International Raceway
Georgia Retail Federation	Talladega Superspeedway
Illinois Retail Merchant Association	The Seed Foundation
Indiana Retail Council	United States Tennis Association (USTA)
Kansas Speedway	Washington Retail Association
Martinsville Speedway	Watkins Glen International
Progress Energy	

Public Institutions and Non-Profit Organizations

Baptist Health South Florida	Jacksonville Chamber of Commerce
Citizens of Clean Energy	Louisiana Committee for Economic Development
City of Plantation	Miami Marine Stadium
City of West Palm Beach	Miami Museum of Science
Economic Development Commission of Collier County	Miami-Dade County Public Schools
Economic Development Commission of Lee County	Miami-Dade Expressway Authority
Economic Development Commission of Mid-Florida	Miami Downtown Development Authority
Enterprise Florida, Inc.	Port of Miami
Farm Share, Inc.	SEUI Healthcare Florida
Flagler Development	South Florida Progress Foundation
Florida Bankers Association	Space Florida
Florida Citrus Mutual	State of Florida
Florida International Bankers Association	SW Florida Regional Chamber of Commerce
Florida League of Cities	Sylvester Comprehensive Cancer Center
Florida Nursing Homes Alliance	Tampa-Hillsborough Expressway Authority
Florida Outdoor Advertising Association	The Beacon Council
Florida Ports Council	The Florida Bar
Florida Retail Association	The Florida Chamber Foundation
Florida Sports Foundation	The Florida Coalition for Capital
Friends of Miami Marine Stadium	United Nations Economic Development Program
Independent Colleges and Universities of Florida (ICUF)	United Teachers of Dade
Inter-American Development Bank	Visit Florida
Jackson Health Systems	Zoological Society of Florida

Latin America-Based Institutions

Allied-Domecq, Mexico	<i>Mercantil Servicios Financieros, Venezuela</i>
Association of Peruvian Banks	Peruvian Management Institute (IPAE)
Federation of Inter-American Financial Institutions (FIBAFIN)	The Brunetta Group of Argentina
Fonalledas Enterprises, Puerto Rico	