

SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

BILL: SB 2278

SPONSOR: Senator Diaz de la Portilla

SUBJECT: Technology Transfer

DATE: March 4, 2002

REVISED: _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Bimholz	Maclure	CM	Favorable
2.			ED	
3.			AED	
4.			AP	
5.				
6.				

I. Summary:

This bill has been developed out of recommendations from Interim Project Report 2002-123, *Technology Transfer and Commercialization*, by the Senate Committee on Commerce and Economic Opportunities.¹ In summary, the report finds that:

- Florida universities, in general, do not appear to be performing as much technology transfer as many of their peer universities.
- Although there appears to be a lack of consensus among university officials and industry professionals in Florida on how to specifically address a number of important technology-transfer issues, there is agreement that issues generally revolve around certain broad subjects.
- The locations of two of the state's major research universities (University of Florida and Florida State University) in small cities rather than in large metropolitan areas can be disadvantageous to technology-transfer activity.
- In order to ensure optimal implementation of future solutions, resolution of key technology-transfer issues must be agreeable to both parties in university-industry transactions.
- It is important for university officials, industry professionals, and state economic development officials to meet regularly to resolve technology-transfer issues and lay the groundwork for informal interaction among technology-transfer players.

¹ Senate Committee on Commerce and Economic Opportunities, *Technology Transfer and Commercialization*, Interim Project Report 2002-123, November 2001.

This bill contains legislative findings regarding the economic development benefits of and the factors facilitating technology transfer. The bill also directs the Florida Board of Education (board) to establish a process that facilitates the regular meeting of university officials, industry professionals, state economic development officials, and other individuals involved in technology-transfer efforts for various technology-transfer-related purposes. While establishing this process, the board must consult with certain organizations that work with the academic or business communities on issues related to technology transfer and commercialization. The bill also requires the board to submit annual progress reports to the Governor and the Legislature.

This bill creates section 288.9525, Florida Statutes.

II. Present Situation:

“Technology Transfer” Defined and Described

“Technology transfer” is commonly used to refer to a complex commercialization process through which an entity that develops a new technology, but does not have the wherewithal or desire to bring it to market, transfers that raw technology to another entity that does. Many different types of donor-recipient pairings can engage in technology transfer, including university-to-business, business-to-business, and federal government-to-business.

Technology transfer between a university and a business can occur in many different ways. The Council on Governmental Relations describes six major models of technology transfer:

- **Sponsored Research:** Typically, a corporation provides funding for a specified statement of work for a limited period of time.
- **Collaborative Research:** Collaborative research, especially when partially funded by government, enables participants to leverage limited resources in the achievement of mutually beneficial research objectives.
- **Consortia:** In a university-based research consortium, participating companies join forces and contribute resources, often in the form of an annual fee, to support research in a technical area of common interest.
- **Technology Licensing:** Consideration for a university license agreement is offered by a licensee to obtain commercialization rights in intellectual property owned by a university.
- **Start-up Companies:** New companies are established to commercialize a university technology, rights to which are obtained through a license agreement.
- **Exchange of Research Materials:** Material transfer agreements generally stipulate that the materials are provided for research purposes only and not for commercialization.²

A business’s use of university faculty as consultants or its hiring of university students could also be considered forms of technology transfer.³

² Council on Governmental Relations, *A Review of University Industry Research Relationships*, at <http://www.cogr.edu/univ.htm>, 1996 (last visited October 9, 2001).

³ Business-Higher Education Forum, *Working Together, Creating Knowledge: The University-Industry Research Collaboration Initiative*, 2001, p. 21.

Benefits of Technology Transfer

Research indicates that “university-industry technology transfer can be a stimulant, precursor, or complement to building a high-skills, high-wage state economy.”⁴ In fact, the licensing of innovations by universities and other research entities added more than \$40 billion to the U.S. economy and supported 270,000 jobs in 1999.⁵

Moreover, as described by the Industrial Research Institute, technology transfer provides many other benefits to both businesses and universities.⁶ Corporate benefits include accessing expertise not available in corporate laboratories, assisting in the renewal and expansion of a company’s technological inventory, gaining access to students as potential employees, using the university as a means of facilitating the expansion of external contacts for the industrial laboratory, expanding pre-competitive research with universities and with other companies, and leveraging internal research capabilities. Technology-transfer benefits to universities include obtaining financial support for a university’s educational and research missions; broadening the experience of students and faculty; identifying significant, interesting, and relevant problems; enhancing regional economic development; and increasing employment opportunities for students.

It is important to note, though, that, while technology licensed to either in-state or out-of-state businesses is valuable, it does not result in many of the aforementioned benefits that stem from close university-industry collaboration or from the spin-off of local, university-generated start-up companies. Many state governments recognize that it is through these mechanisms, as well as through the related attraction of research and development-oriented firms from other states, that “university-industry collaborations can play a central role in economic development efforts.”⁷

Existing Statutory and Regulatory Framework for Technology Transfer in the State

At the state level, a number of statutes, regulations, and policies govern technology-transfer activities. Public universities in the state may create, with the approval of the Department of Education, divisions of sponsored research to administer and promote research programs (s. 240.241, F.S.). Seven state universities have established such divisions.⁸ Though individual practices vary, many state universities have established technology-licensing or technology-

⁴ Louis G. Tornatzky, Ph.D., *Building State Economies by Promoting University-Industry Technology Transfer* (Washington, D.C.: National Governors Association, 2000), p.7.

⁵ Association of University Technology Managers, Inc., *Surveys – Common Questions & Answers About Technology Transfer*, at <http://www.autm.net/pubs/survey/qa.html>, November 13, 2000 (last visited September 23, 2001).

⁶ Industrial Research Institute, *A Report on Enhancing Industry-University Cooperative Research Agreements* (Washington, D.C., 1995), p. 1, as cited by the Business-Higher Education Forum, p. 22.

⁷ Business-Higher Education Forum, *supra* note 3, at 22-23.

⁸ Auditor General, *Assignment by Universities of Intellectual Property and Related Income to University Research Foundations*, Report No. 01-144, May 2001, p. 1.

transfer offices or units that facilitate the movement of university inventions into the marketplace. To that end, each university may secure letters of patent, copyrights, and trademarks on any work products and enforce its rights therein (s. 240.229, F.S.). This authority includes the ability to license, lease, assign, or otherwise give written consent to a corporation for the manufacture or use of a work product on a royalty basis or for other consideration.

The forging of relationships between state university inventors and the private sector is also affected by Florida's Code of Ethics for Public Officers and Employees (part III, ch. 112, F.S.). The code prohibits a university employee from holding employment or contractual relationships with entities doing business with the university, or from holding employment or contractual relationships that create a frequently recurring conflict between the employee's private interests and public duties. (See s. 112.313(7)(a), F.S.) The code provides an exception when the transaction emanates from the university's technology-transfer and sponsored-research activities – if the transaction is specifically approved by the university president and the chancellor of the Board of Regents.⁹

Technology transfer in this state also is governed by administrative rules applicable to employment in the state university system,¹⁰ the collective bargaining agreement with the United Faculty of Florida, and rules and policies of individual universities. Together the collective bargaining agreement and the universities' rules and policies establish the day-to-day procedures and standards applicable to technology transfer.

Findings and Recommendations from the Interim Report

This bill has been developed out of recommendations from Interim Project Report 2002-123 by the Senate Committee on Commerce and Economic Opportunities.¹¹ The report finds that:¹²

- With the possible exceptions of the University of Florida's (UF) patent generation, the University of South Florida's company establishment, and UF's and Florida State University's (FSU) license-income levels, Florida universities, in general, do not appear to be performing as much technology transfer as many of their peer universities. Moreover, most of FSU's and UF's license revenues are derived from a total of three products.
- Given the high historical, geographic, demographic, cultural, and economic variability among and within states, there is no one-size-fits-all strategy for facilitating university-industry collaboration. Although responses to a survey committee staff sent to university

⁹ Section 112.313(12)(h), F.S. Chapter 2001-170, L.O.F., abolished the Board of Regents effective July 1, 2001, and transferred its functions to the Florida Board of Education (s. 229.003(5), F.S.).

¹⁰ Under rule 6C-5.945, F.A.C., for example, the Board of Regents prescribed employee ethical obligations, including prohibiting employees from engaging in business transactions in substantial conflict with the performance of their duties.

¹¹ Senate Committee on Commerce and Economic Opportunities, *Technology Transfer and Commercialization*, Interim Project Report 2002-123, November 2001.

¹² *Id.*, pp. 4-8.

officials and industry professionals in Florida indicated a lack of consensus on how specifically to address a number of important technology-transfer issues, there was agreement that issues generally revolve around three main subjects: differing university and industry cultures, legal/policy impediments to technology transfer, and lack of technology-transfer-related inputs.¹³

- The locations of two of the state's major research universities (UF and FSU) in small cities rather than in large metropolitan areas can be disadvantageous to technology-transfer activity.
- In order to ensure optimal implementation of future solutions, resolution of key technology-transfer issues must be agreeable to both parties in university-industry transactions.
- It is important for university officials, industry professionals, and state economic development officials to meet regularly to resolve technology-transfer issues and lay the groundwork for informal interaction among technology-transfer players.

Based on these findings, the report recommends that the Legislature direct the Florida Board of Education (board) to establish a process that will facilitate the regular meeting of university officials, industry professionals, and state economic development officials for the purposes of discussing state technology-transfer issues; developing solutions to state technology-transfer problems; creating mechanisms by which informal university-industry interaction can be increased; and facilitating synergistic collaboration between state universities located in non-metropolitan areas and those residing in the state's larger cities. In performing these duties, the board should consult with organizations that work with both the academic and business communities, such as Enterprise Florida, Inc., the Florida Research Consortium, the InternetCoast Research Consortium, Florida High Tech Corridor Council, Inc., the Technological Research and Development Authority, and the Florida Space Research Institute.

The report further recommends that the board regularly report on its activities to the Governor and the Legislature. At a minimum, progress reports should include the following information: a description of the board's activities, detailed descriptions of barriers to state technology transfer, summaries of issues regarding the facilitation of informal university-industry interaction and technology-transfer collaboration between state metropolitan and non-metropolitan universities, and proposed methods for enhancing technology transfer in the state. When appropriate, the board should also make specific recommendations to the Legislature regarding proposed statutory changes that could improve technology transfer in the state.

Related Entities

*Florida Board of Education*¹⁴: The 2001 Legislature passed the Florida Education Governance Reorganization Implementation Act (act) (ch. 2001-170, L.O.F.). Effective July 1, 2001, the act

¹³ The report notes that Florida is lagging behind many of its competitors in terms of R&D intensity (*i.e.*, the ratio of R&D expenditures to gross state product) and venture capital investment.

¹⁴ Office of Program Policy Analysis and Government Accountability, *Justification Review, State University System, Department of Education*, Report No. 01-28, May 2001, pp. 2-4.

transferred the powers and duties of the Board of Regents to local boards of trustees for each university and the newly created Florida Board of Education. The Florida Board of Education oversees the entire K-20 educational system. In addition to its responsibilities for K-12, community colleges, and independent schools, the Florida Board of Education is responsible for several aspects of postsecondary education, including appointing the chancellor of colleges and universities; recommending a coordinated budget for the K-20 system; establishing accountability standards for the K-20 system; establishing policies for university boards of trustees to follow in the selection of university presidents; and developing a coordinated five-year plan for postsecondary enrollment.

*Governor's Office of Tourism, Trade, and Economic Development (OTTED)*¹⁵: OTTED assists the Governor in working with the Legislature, state agencies, business leaders, and economic development professionals to formulate and implement coherent and consistent policies and strategies designed to provide economic opportunities for all Floridians (s. 14.2015, F.S.). OTTED is also responsible for monitoring the activities of public-private partnerships and state agencies in order to avoid duplication and promote coordinated and consistent implementation of economic development programs.

Enterprise Florida, Inc.: Created in 1992, Enterprise Florida, Inc., (Enterprise Florida) is a partnership between Florida's government and business leaders and is the principal economic development organization for the state (s. 288.901, F.S.).¹⁶ Under contract with OTTED, Enterprise Florida's mission is to increase economic opportunities for all Floridians by supporting the creation of quality jobs and globally competitive businesses. It pursues this mission in cooperation with its statewide network of economic development partners. Enterprise Florida has established the Florida TEC Leadership Council, an appointed group of Florida business leaders which advises the Enterprise Florida Board of Directors on how to improve the state's technology infrastructure (including workforce, education, research, and capital) and position the state as a globally recognized leader in technology and innovation.¹⁷ It should also be noted that s. 288.9515(5), F.S., authorizes Enterprise Florida to create, based upon its research, "technology commercialization programs in partnership with private enterprises, educational institutions, and other institutions to increase the rate at which technologies with potential commercial application are moved from university, public, and industry laboratories into the marketplace."¹⁸

¹⁵ Senate Committee on Commerce and Economic Opportunities, *International Business Promotion*, Interim Project Report 2002-124, October 2001, p. 3.

¹⁶ See Office of Program Policy Analysis and Government Accountability, "Profile No. 6097," *Florida Government Accountability Report*, at <http://www.oppaga.state.fl.us/profiles/6097/>, February 6, 2002 (last visited March 2, 2002).

¹⁷ The acronym "TEC" stands for "Technology, Entrepreneurship, Capital." Source: Materials distributed by Enterprise Florida at its board of directors meeting and workshop, August 15-16, 2001.

¹⁸ Section 14, ch. 93-187, L.O.F., provides that this section is "repealed December 31, 2003, and shall be reviewed by the Legislature prior to that date. The review must be in accordance with criteria set forth in law."

*Florida Research Consortium*¹⁹: The consortium, a recently created advisory board to ITFlorida.com, Inc., is composed of volunteer university heads and industry leaders whose goal is to establish progressive research programs at Florida's universities.²⁰ These programs are to focus on attracting leading scholars and researchers in technology-based disciplines to Florida's universities in order to build the state's knowledge base; endowing faculty and research chairs in targeted disciplines; facilitating the work of technology-transfer offices at member universities; promoting collaboration between academic and industrial researchers, scientists, and engineers; and promoting collaboration between Florida industry and academia to facilitate the development and deployment of new technologies.

*InternetCoast Research Consortium*²¹: The consortium, an InternetCoast committee, was formed in April 2001 for the purpose of facilitating the collaboration of information technology and telecommunications research among universities and colleges located in Broward, Palm Beach, and Miami-Dade counties.²² The consortium's membership is composed of representatives of both the private and public sectors, including representatives of Barry University, Florida Atlantic University, Florida International University, Nova Southeastern University, and the University of Miami. The consortium's mission is to create a structure and process that facilitates the collaboration of research and educational activities among InternetCoast universities, colleges, and other entities to (1) identify and encourage innovations in core technologies (*e.g.*, information technology, telecommunications, and related disciplines); (2) obtain funding for research and educational activities from a variety of sources; (3) assist in the transfer of technology developed by the InternetCoast educational institutions to the private sector; and (4) create linkages between these activities and appropriate workforce creation initiatives.

*Florida High Tech Corridor Council, Inc.*²³: Created in 1996, the corporation facilitates partnerships, activities, and research among the University of South Florida, the University of

¹⁹ ITFlorida.com, Inc., *Florida Research Consortium*, at <http://www.itflorida.com/tech/consortium.asp> (last visited March 2, 2002).

²⁰ The Legislature created the Information Service Development Technology Taskforce in June 1999 to focus on the development of state policies that would enable Florida to compete successfully in the information age. The taskforce was dissolved in July 2001. ITFlorida.com, Inc., an outgrowth of the taskforce, is an umbrella, not-for-profit organization that represents Florida's diverse technology community on a statewide basis. ITFlorida.com, Inc., promotes the common interests of its members by doing the following: advocating on behalf of its members and formulating policy recommendations to federal, state, and local government; serving as a clearinghouse for technology-related information; and sponsoring statewide conferences, symposia, and other events focused on issues important to its members and the state. *See* ITFlorida.com, Inc., *About*, at <http://www.itflorida.com/browse/about.asp> (last visited March 2, 2002).

²¹ Leslie J. Croland, Esq., *InternetCoast Research Consortium Committee*, presentation to the InternetCoast, October 5, 2001.

²² The InternetCoast is a grassroots organization of businesses, organizations, and educational facilities operating in Southeast Florida. Its five major initiatives are creating awareness of the InternetCoast through branding, increasing the number of knowledge-based workers in South Florida, increasing the number of venture capital companies located in South Florida, increasing the bandwidth in South Florida, and mending the gap created by the digital divide. *See* InternetCoast, *About the InternetCoast*, at http://www.internetcoast.com/gendocs_display.php?id=3 (last visited December 2, 2001).

²³ Randy Berridge, President, Florida High Tech Corridor Council, Inc., in a letter to the Senate Committee on Commerce

Central Florida, local economic development organizations, local community colleges, and industry leaders for the purpose of enhancing the regional attraction, retention, and growth of high-technology companies.

*Technological Research and Development Authority*²⁴: Created by the Legislature, the authority is an organization, led by a board of private-sector professionals, which allies with NASA, the aerospace industry, and various state entities (e.g., the Department of Education, the Department of Community Affairs, Enterprise Florida) to assist in the transfer of technology to state businesses and educational institutions (ch. 87-455, L.O.F.). The authority also sponsors programs that enhance education, space research, and economic development within the state.

*Florida Space Research Institute*²⁵: Created by the Legislature in 1999, the institute is a public-private partnership that promotes collaboration among the state's academic institutions, industry, and federal agencies to support statewide space-related education, training, research, and technology development (s. 331.368, F.S.).

III. Effect of Proposed Changes:

By creating s. 288.9525, F.S., relating to technology transfer and commercialization, this bill addresses the findings and recommendations of Interim Project Report 2002-123, *Technology Transfer and Commercialization*, by the Senate Committee on Commerce and Economic Opportunities. This new section of the Florida Statutes, contains legislative findings that (1) technology transfer produces economic development benefits for the state and the public and is a worthy public policy goal of the state and (2) technology transfer is facilitated by encouraging communication and relationships among research, commercial, and economic development entities; by minimizing legal and policy impediments to technology transfer; and by optimizing the availability of technology-transfer-related resources.

The bill directs the Florida Board of Education (board) to establish a process that facilitates the regular meeting of university officials, industry professionals, state economic development officials, and other individuals involved in technology-transfer efforts for the purposes of discussing state technology-transfer issues; developing solutions to state technology-transfer problems; creating mechanisms by which informal university-industry interaction can be increased; and facilitating technology-transfer-related collaboration between universities located in smaller metropolitan areas in the state and those located in the state's larger metropolitan areas. While establishing this process, the board must consult with the Office of Tourism, Trade, and Economic Development; Enterprise Florida, Inc.; the Florida Research Consortium; the InternetCoast Research Consortium; Florida High Tech Corridor Council, Inc.; the Technological Research and Development Authority; the Florida Space Research Institute; and

and Economic Opportunities, August 16, 2001.

²⁴ Technological Research and Development Authority, in materials sent to the Senate Committee on Commerce and Economic Opportunities, August 24, 2001.

²⁵ See <http://www.fsri.org/home.html> (last visited December 2, 2001).

other organizations or individuals that work with the academic or business communities on issues related to technology transfer and commercialization.

The bill requires the board to submit a progress report to the Governor and the Legislature no later than 60 days before each regular legislative session. The report must include, at a minimum, the following information: descriptions of the activities planned or performed by the board related to the newly created s. 288.9525, F.S.; detailed descriptions of barriers to technology transfer in the state; summaries of issues regarding the facilitation of informal university-industry interaction and technology-transfer-related collaboration between universities located in smaller metropolitan areas in the state and those located in the state's larger metropolitan areas; and specific recommendations to the Legislature regarding proposed statutory or budgetary changes that could improve technology transfer in the state.

This act shall take effect upon becoming a law.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Economic Impact and Fiscal Note:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Not only do university-industry partnerships increase the speed and frequency with which new discoveries move from the laboratory to the market, but “university-industry technology transfer can be a stimulant, precursor, or complement to building a high-skills, high-wage state economy.”²⁶ Thus, to the extent the provisions of this bill increase the amount of technology transfer occurring in the state, businesses and individuals might benefit.

²⁶ Association of University Technology Managers, Inc., *supra* note 5; Tornatzky, *supra* note 4, at 7.

C. Government Sector Impact:

Technology transfer can be a source of revenue for universities.²⁷ Thus, to the extent the provisions of this bill increase the amount of technology transfer occurring in the state, universities might benefit.

The bill directs the Florida Board of Education (board) to establish a process that facilitates the regular meeting of university officials, industry professionals, state economic development officials, and other individuals involved in technology-transfer efforts for various technology-transfer-related purposes. The bill also requires the board to submit annual progress reports to the Governor and the Legislature. The board estimates that it would cost approximately \$35,000 annually to administer this process.²⁸ The cost estimate is based on the following:

Air travel:	\$225 x 18 (participants) x 6 (meetings per year)	= \$24,300
Lodging:	\$75 x 18 (participants) x 6 (meetings per year)	= \$ 8,100
<u>Incidental:</u>		= <u>\$ 2,600</u>
Total		\$35,000

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Amendments:

None.

This Senate staff analysis does not reflect the intent or official position of the bill's sponsor or the Florida Senate.

²⁷ Senate Committee on Commerce and Economic Opportunities, *Technology Transfer and Commercialization*, *supra* note 1, at 2 and 5.

²⁸ Florida Board of Education, *Fiscal Analysis, SB 2278*, February 27, 2002.