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Higher Education, Globalization and Economic Development in Virginia



State Council of Higher Education for Virginia

Advancing Virginia through Higher Education

State Council of Higher Education for Virginia

White Paper

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Table of Contents

	<u>Page</u>
I. Introduction and Overview	2
A. Why SCHEV did this study	
B. Background of SCHEV actions	
C. Overview of Paper	
II. Impact of Globalization on the Economy and Today's Higher Education Graduates: A National and State View	4
A. World Approaches to Globalization of Economies and Higher Education	
B. Globalization in the United States	
C. Virginia Responses to Globalization	
III. Globalized Higher Education as a Driver of State Economic Development	10
A. Introduction – conceptualizing a Virginia higher education and economic development pipeline.	
B. Taxonomy of potential players in such a pipeline	
C. UBED Model	
D. Virginia Successes	
E. Lessons learned from examples	
IV. Blueprint for Future Action	15
A. Recommendations for SCHEV	
B. Recommendations for Institutions	
C. Recommendations for the leadership of the Commonwealth of Virginia	

State Council of Higher Education for Virginia

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Higher Education, Globalization and Economic Development in Virginia

I. Introduction and Overview

Virginia's ability to connect with the globe has never been more important. The worldwide shift from manufacturing-based to knowledge-based economies requires a more educated and skilled workforce. In recent years, countries able to supply such a workforce have experienced considerable growth in wealth, prosperity, and stature. Virginia, like all other nations and states, must ensure its future competitiveness in this new global economy by positioning itself to seize lucrative and lasting economic development opportunities. The capacity of institutions of higher education to train a competent workforce in this environment is vital. Increased awareness and concern about these issues of global competitiveness led the State Council of Higher Education for Virginia to study the nexus between the internationalization of higher education and statewide economic development concerns.

In early 2009, SCHEV initiated an effort to assess the status of the Commonwealth's international education programs. A survey was distributed to the public and private institutions, focusing on critical aspects of contemporary international education programs as identified by an ad hoc group of university-based international program directors. The survey inquired about 1) internationalization efforts of their institutions as reflected by mission statements and strategic plans, 2) inclusion of global concepts in the General Education curriculum, 3) foreign language and study abroad requirements and participation, and 4) international student populations. Institutions were also asked about funding and administrative structure of international program offices, and economic development efforts. The survey responses and a summary of the results can be found at <http://www.schev.edu/AdminFaculty/global/>.

Following collection of survey data, Council was briefed in March 2009 by a panel of experts discussing the roles that higher education can play in strengthening our state's competitive standing. Uliana Gabara, Dean of International Education at the University of Richmond, described what other nations have done to improve their competitive positions in higher education, providing a sense of the challenges ahead for the Commonwealth. Tom Hennessey, Chief of Staff at George Mason University, discussed the concept of the "global university" at his institution and lessons learned from its multicultural student body and its programs and sites in other countries. Finally, Nancy Agee, member of the Board of Visitors at Radford University, discussed her institution's internationalization efforts, especially in the health care disciplines, which have been at the forefront of the movement to attract and train globally competent workers. Council took from the briefing an imperative to foster communication between those involved in internationalization of higher education and those responsible for state economic development.

In December 2009, SCHEV convened a meeting of international education and economic development professionals to discuss the alignment of the internationalization of higher education and economic development. The meeting attempted to address two specific inquiries: 1) is there a productive role for statewide coordination of institutional efforts at globalization?; and 2) how should that role be defined to support Virginia's competitiveness in education and economic development?

In attendance were representatives of international programs and offices from 21 Virginia institutions, members of Virginia's economic development community, members of the Virginia Council for International Education, Council members and SCHEV staff. Attendees heard remarks about international education from the University of Richmond's Dean of the Office of International Education and from a panel of speakers that highlighted the educational implications of the partnership between Rolls-Royce, the University of Virginia, and Virginia Tech, both for cultural competency development and for discipline-specific knowledge. General themes discussed in the meeting included:

- the development of global competence,
- the scope of international education at Virginia's institutions,
- leveraging international students for economic development,
- the challenges posed to the U.S. business and higher education sectors by U.S. immigration policy, and
- how the Commonwealth, and its higher education and business communities can work together to meet Virginia's economic development needs.

Overview of Paper: This paper contains key findings that will be useful to state decision makers seeking to understand the connection between international higher education and economic development. The paper describes current worldwide and national trends that have given rise to efforts by governments and educational systems to globalize higher education. It examines the current and projected impact of these trends on Virginia's economy, its institutions of higher education, and their students. Lastly, it highlights current successful economic development projects that have aligned with globalized higher education and shapes the lessons learned from these projects into recommendations for Virginia's higher education and economic development leaders.

II. Impact of Globalization on the Economy and Today's Higher Education Graduates: A National and State View

World Approaches to Globalization of Economies and Higher Education: The globalization of the economy and improvement of educational systems in certain regions of the world have put pressure on the United States to maintain its position as the leading higher education system in the world. A marked decline in our production of graduates relative to that of other nations is widely cited as evidence of slipping quality of the United States higher education system. Statistics by the Organisation for Economic Development (OECD) show that the proportion of America's young adult (ages 25-34) population with a college degree has remained fairly stable over the past 40 years at about 39%. However, in the past decade, other OECD countries have surpassed the US and reached rates of 54% in degree attainment.¹

These statistics also reflect the fact that many emerging economies of the world are emulating America's formula for success by investing heavily in higher education and research and development. Some, such as Qatar, Singapore, and the United Arab Emirates, promote this strategy as a matter of public policy. For example, Singapore's national strategy has been to revamp its P-16 educational system with a stronger focus on math, science and technology, and language skills. The strategy of these Middle Eastern countries has been to recruit prestigious foreign universities to establish local campuses. These countries are now poised to compete directly with the US and the rest of the world for the investments of global firms that create jobs and drive economic growth.

¹ Organisation for Economic Development (2009). Education at a Glance 2009: OECD Economic Indicators. Retrieved from <http://www.oecd.org/>.

“Globalization” has also become a specialized term in higher education that relates to how individual institutions seek to ensure the effectiveness of their academic programs in a global society. In the context of higher education, globalization has been defined as “the broad economic, technological, and scientific trends that directly affect higher education and ‘are largely inevitable’.”² Globalization affects the educational needs of today’s postsecondary graduate by altering the knowledge, skills, and abilities graduates need to be effective in their chosen profession and to benefit society as a whole.

Globalization in the United States: Across the nation, states have responded to globalization by passing legislation supportive of international education and establishing task forces to study international education at the secondary level. Other state government initiatives have included analyzing statewide capacity at both the secondary and post-secondary levels, examining best practices in delivery of international education activities, exploring international and intercultural partnerships, and polling citizens regarding support of international education.³

One way in which U.S. institutions of higher education are responding to the phenomenon of globalization is by internationalizing their campuses and curricula. Internationalization refers to the specific policies and programs undertaken by governments, academic systems, institutions, and individual departments to cope with globalization. It has been defined as “the integration of an international dimension into the teaching, research, and service functions of higher education.”⁴ Internationalization takes on a variety of forms and many of the methods and strategies of internationalization on postsecondary campuses can be generally categorized as international education. International education is described as “programs of study, service, and research that enlarge the understanding of the world beyond our borders and improve the comprehension of people in other societies of the dynamics and values that shape the United States.”⁵

According to the American Council on Education (2005), indicators of internationalization can be found in an articulated mission, academic offerings, organizational infrastructure, external funding, institutional investment in faculty, the presence of international students, and

² Altbach, P.G. (2004). Globalization and the University: Myths and Realities in an Unequal World. *Tertiary Education and Management* 10(1), 3-25.

³ Sanders, T. and Stewart, V. (2004). *International Education: From Community Innovation to National Policy*. Phi Delta Kappan.

⁴ Knight, J., & deWit, H. (1995). Strategies for internationalisation of higher education: Historical and conceptual perspectives. In H. deWit (Ed.), *Strategies for internationalisation of higher education* (pp. 5-32). Amsterdam: European Association for International Education Publications

⁵ The Virginia Council on International Education, an association of Virginia international educators.

student programs.⁶ On-campus functions can include leveraging the presence of international students to provide cultural knowledge, activities of internationally-themed research centers, and short term and long term study abroad. In terms of relationships with foreign entities, it can take the form of partnerships, research collaborations and exchange programs with international universities, and establishing international internship programs for graduate and professional students. Internationalization efforts are one product of higher education's recognition of its responsibility to graduate globally competent citizens and to meet the acknowledged educational needs for the 21st Century.

Rather than a term with one universally agreed-upon definition, "global competence" is a concept that has been collaboratively devised by education and business professionals. It is used to embody the knowledge, skills, and abilities today's graduates need to function effectively in a globally interdependent society. It commonly refers to a need for cultural understanding and awareness and an ability to interact with people from different backgrounds. Other components of global competency include cross-cultural communication skills, proficiency in a language other than one's own (a skill which facilitates cultural understanding), knowledge of world regions, and an awareness of the international dimensions of one's profession. Developing global competency is not a definitive goal, rather an on-going process that includes: frequent interaction and exchange with people from other cultures, up-to-date knowledge of world events, exposure to current research and regular use of intercultural communication skills.

The need and applicability of global competencies span a variety of professions including, but not limited to, business, economic development, government affairs, and science and technology education. There has been a national concern that these skills are lacking in today's graduates. The American Council on Education (2003) has indicated that graduates of U.S. business education programs were underprepared with regard to international knowledge and the American Association of Colleges and Universities (2006) has found that business leaders believe that colleges are underemphasizing 'global issues.' Researchers have stressed the need for U.S. undergraduate engineering students to gain international experiences as well.⁷ To address such findings, some teacher preparation programs are facilitating international student teaching experiences, and other institutions have international service trips

⁶ Green, M. (2005). *Mapping internationalization at comprehensive universities*. Washington, DC: American Council on Education.

⁷ Lohmann, J. (2003). Georgia Tech's Strategies for Preparing Engineers. Paper presented at 2003 conference of the European Society for Engineering Education, September 7, 2003. Porto, Portugal; Ratti, U. & Klahr, S. (2000). Increasing engineering student participation in study abroad: A study of U.S. and European programs. *Journal of Studies in International Education*, 4, 70-102.

in which students can participate regardless of their academic major. In addition to specific disciplines adding study or work abroad experiences to their programs, partnerships between higher education institutions and international companies located in the United States also provide international and intercultural experiences that can foster the acquisition of global competencies.

While education abroad has been a traditional means by which to incorporate a global perspective into an academic program, United States higher education institutions are recognizing that intercultural learning can also be greatly enhanced by increasing opportunities for international interactions between students on domestic campuses. This strategy is often referred to as “internationalization-at-home”. As described in one recent study, internationalization-at-home is the development of “a conceptually-integrated systems approach to international education that encompasses the entire university. Its main goal is to have international education pervade the university so that all students, faculty, and staff are internationally engaged at some point during their college careers.”⁸

The presence of international students on campus plays an important role in globalization strategies, since interaction with international students is one way in which U.S. students can acquire, practice, and strengthen global competencies. Speaking on this subject, Allan Goodman, President and CEO of the Institute of International Education (IIE), stated that international students’ “active engagement in U.S. classrooms provides students with the valuable skills that will enable them to collaborate across political and cultural borders to address shared challenges in the years ahead.” Some states have embraced the recruitment of international students as a statewide imperative, and have developed campaigns promoting their education systems and other state assets as a study destination.⁹ Whether attributed to such active efforts or not, international students continue to flock to U.S. colleges and universities. According to the *2009 Open Doors Report* by the Institute of International Education (IIE), the number of international students in United States institutions of higher education increased by 8% to 671,616 in the 2008/09 academic year.¹⁰ The majority of these students are enrolled in business and management programs, with a significant number enrolled in engineering, math, and computer science programs.¹¹

⁸ Nilsson, B. (2003). Internationalization at Home From a Swedish Perspective: The Case of Malmö. *Journal of Studies in International Education*, 7(1), 27-40.

⁹ See, for example, “Study Alabama,” <http://www.usouthal.edu/acip/>; “Study New York,” <http://www.studynewyork.com/>; “Study Wisconsin,” <http://www4.uwm.edu/Org/studywi>.

¹⁰ Institute of International Education (2009). *Open Doors 2009*. Retrieved from <http://www.opendoors.iienetwork.org/>

¹¹ Ibid.

Virginia Responses to Globalization: For the Commonwealth of Virginia, international issues and inter-cultural competence are particularly important. According to the Virginia Council on International Education (VaCIE), there are several factors that make the development of global competency essential for the state's higher education graduates, including:

1. more than 10 percent of Virginia's workforce is employed in the federal government and military, employment sectors which depend on a globally competent workforce;
2. Virginia is one of the top ten states in the U.S. for incoming immigrants and foreign nationals;
3. the Commonwealth's communications and information technology sector is a global enterprise; and
4. the Commonwealth is one of the top five creators in the country of high-technology jobs, and its role in the national and international communities continues to grow.

The Virginia Economic Development Partnership (VEDP) lists more than 800 internationally-owned businesses from 45 countries in the Commonwealth. In trying to respond to the workforce demands of these businesses, Virginia's postsecondary students have a great incentive to acquire industry-specific skills, use foreign languages, apply and enhance knowledge of world regions, and use and develop intercultural skills. Accordingly, as VaCIE has articulated, our Commonwealth and its universities and colleges today face unprecedented challenges for international education.

Despite an increase in study abroad participation by students in Virginia's colleges and universities, international educators are still challenged to find ways to ensure that all students are globally competent. As with higher education institutions nationwide, Virginia's institutions have initiated a variety of efforts to explore the establishment of branch campuses in other countries, to develop exchange relationships with foreign institutions and to internationalize their campuses at home. Analysis of data collected through the SCHEV survey referenced earlier in this report found that over half of the state's institutions (public and private) have a general education requirement that includes a global theme. Roughly 37% of the public institutions and 18% of the privates have a foreign language proficiency requirement. And approximately 37% of the publics and 23% of the privates have a requirement for experiential learning abroad in one or more program of study. While the percentages suggest that, in aggregate, Virginia has room to expand its provision of international education, individual survey answers reflected the

significant time and attention that many of the institutions have dedicated to globalization initiatives in recent years.

Globalization efforts are not limited to the four-year institutions, or to the larger or urban campuses. The Virginia Community College System (VCCS) engages in many efforts to interest students in travel and study abroad and many community colleges have on-campus activities such as cultural awareness days and international clubs. To prepare faculty for multicultural classroom experiences and provide them with global perspectives, VCCS also boasts a VaCIE-VCCS International Exchange Program in which faculty can study educational systems in the United Kingdom, the Netherlands, India and Ghana. *Global Virginia* (www.globalvirginia.com), a program housed at the Southwest Virginia Higher Education Center is a notable project in the rural areas of southwest Virginia, where relatively few citizens have had opportunities for international travel. This project coordinates international education programming for a consortium of small two- and four-year colleges and provides international business counseling for firms in the region. Established in 2003 via grant funding from the Virginia Tobacco Commission, Global Virginia also receives grants from the U.S. Department of Education's Business and International Education (BIE) program for short-course summer study programs in Mexico and China. In general, educators in Virginia's rural areas are challenged to find opportunities to develop global skills in a population that has had little international exposure. They work on instilling in the students an appreciation for globalization with programs that focus on preparing them to help local, home-grown businesses to expand into the global marketplace rather than only grooming them to work in global businesses outside of Virginia.

As noted earlier in this report, recruitment of international students is another important activity linking higher education and state-based economic development. Virginia's institutions of higher education, like other U.S. institutions, have increased their efforts in this area due to the anticipated boost of tuition revenue and enhancement of educational quality. Not only do international students pay full, out-of-state tuition, but they and their families purchase many goods and services in the state. Thus, they represent a significant contribution to Virginia's economy. The Institute of International Education estimates that foreign student expenditures in Virginia totaled almost \$338 million in 2009.¹² When combined with internationalization-at-home advantages discussed above, it is clear that international student recruitment efforts provide a tangible return on investment for both institutions and for the state. However, post

¹² Institute of International Education (2009). *Open Doors* report 2009. Retrieved from <http://www.opendoors.iienetwork.org/>

9/11 Federal immigration policies make it more difficult for international students to remain in the United States after graduation. Pre-9/11, these students frequently stayed, gained employment, earned citizenship, and contributed to our economy, often by working for technology-focused start-up companies. Under today's tightened regulations, most take their training and education back to their home countries or elsewhere after graduation.

III. Globalized Higher Education as a Driver of State Economic Development

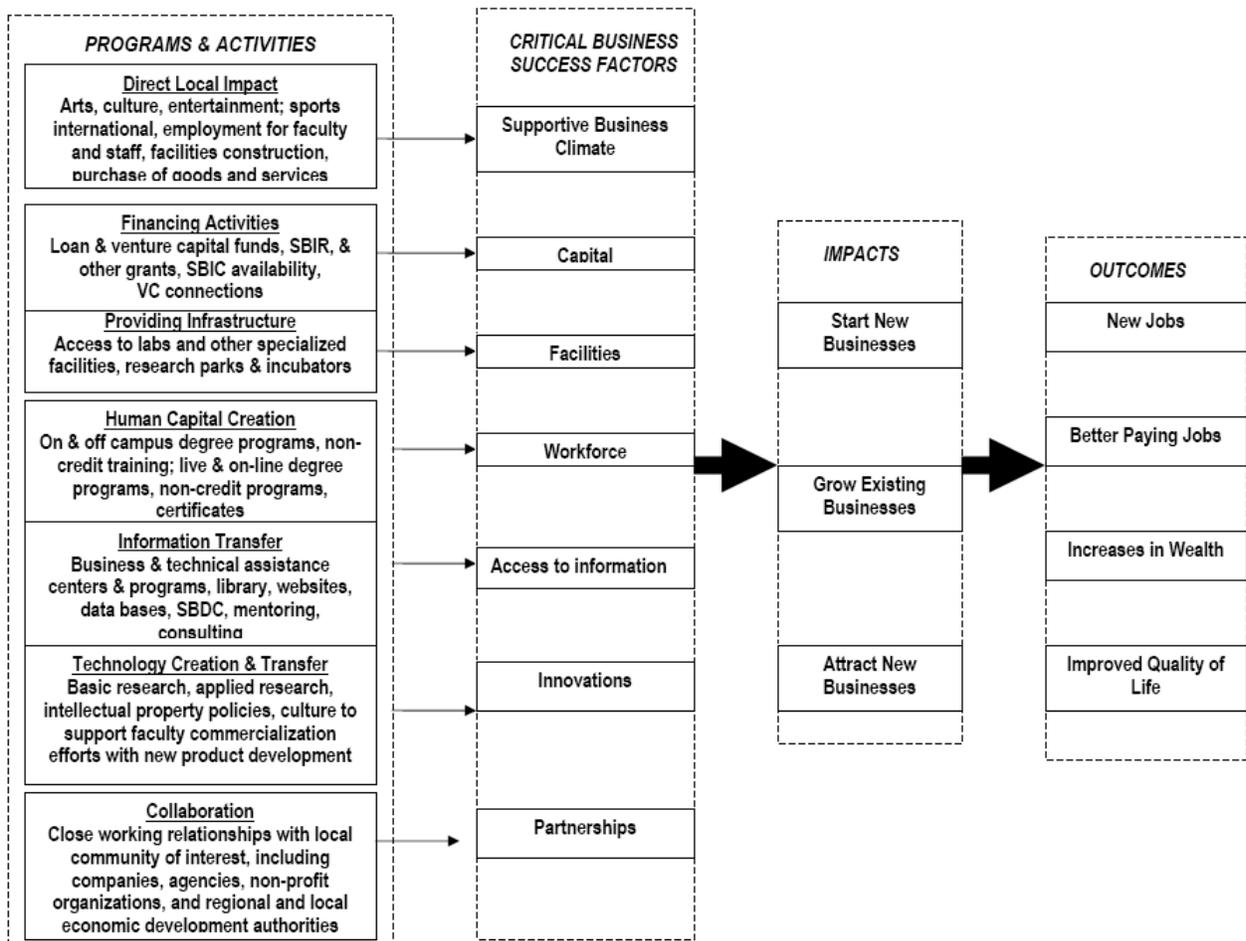
Technological innovation of the past two decades has made the world a level playing field in which geographical divisions are increasingly irrelevant. In higher education, this effect can be observed in the many relationships between academia and foreign universities and businesses, especially among the large research institutions. Such relationships have the potential to generate global economic benefits for Virginia. With effective organization and information-sharing, a distinct pipeline utilizing these relationships could be developed for the delivery of future innovation and economic development. A variety of groups can come together to form such a pipeline, including:

- Institutions of Higher Education. Collaborations need not be limited to large public research institutions; all of our institutions have individual strengths.
- University Associations: The University Based Economic Development (UBED) group and the Virginia Council on International Education (VaCIE) are associations that offer a wealth of academic knowledge and scholarship that can be tapped to develop strategies and effective new projects. Many other associations exist that could be tapped for expertise and interest in economic development opportunities.
- Local Economic Development Authorities and Community Associations: Local economic development authorities, Chambers of Commerce, manufacturing alliances, and business associations have a clear financial incentive to support the development of innovative partnerships. Their members are well-connected with business and community leaders.
- Government entities: The Virginia Economic Development Partnership (VEDP), a state government agency, and the Tobacco Indemnification and Community Revitalization Commission, a political subdivision of the Commonwealth of Virginia, have close relationships to executive and legislative branches and access to state funding that could potentially support new initiatives of mutual interest.

- Advisory groups: The Grow by Degrees Campaign of the Virginia Business Higher Education Council is promoting a substantial increase in the number of associate's, bachelor's and graduate degrees awarded in the state, in order to ensure Virginia's competitiveness in the global knowledge-based economy. The Council on Virginia's Future has studied and engaged in a community forum on enhancing the alignment of higher education with workforce needs. As these initiatives naturally overlap with the goals of globalized higher education, these groups promote and welcome collaboration with higher education institutions.
- Research parks like the Virginia Biotechnology Research Park, which was developed in partnership with Virginia Commonwealth University, seek business partnerships with companies that are engaged in innovative research and technology ventures. The directors and staff of such centers may be untapped resources for identifying global companies that would be interested in establishing partnerships with Virginia's universities.

A flow chart developed by University Based Economic Development (UBED), a group comprised of university-based economic development academics, provides an effective visual illustration. The “University Economic Development Model,” below, shows how university programs and activities combine with business success factors to create even more growth and attract other new businesses to the community. The economic activity further translates to benefits for the entire state, with new jobs, better wages, and improved quality of life.

UNIVERSITY ECONOMIC DEVELOPMENT



While the above chart is geared toward local inputs and impacts, its themes can expand quite readily to a global environment. Several recent high-profile ventures with companies locating or expanding in Virginia provide excellent case studies. Rolls-Royce’s development of two new research and manufacturing centers, in collaboration with The University of Virginia, Virginia Tech, and the Virginia Community College System, is having a significant impact on higher education capacity and economic development in Virginia. The Commonwealth Center

for Aerospace Propulsion Systems (CCAPS), headquartered at UVA, fosters collaborative aerospace research while creating new education opportunities for engineering students at both schools. The Commonwealth Center for Advanced Manufacturing (CCAM), which will complete construction in Prince George County in 2011, will be a flagship operation for the manufacturing, assembling and testing of aerospace components and products.

These projects hold obvious benefits for the Commonwealth of Virginia in terms of jobs and tax revenues, but also have extraordinary advantages for the partner institutions and their students. In the Rolls-Royce project, state funding over a five-year period pays for nine chaired professorships, endows graduate fellowships, funds undergraduate internships, and provides matching research funding. In addition, state monies are supporting the renovation of mechanical engineering laboratories and enhancements to the manufacturing program at the University of Virginia, which will allow the introduction of a manufacturing minor. Participating community colleges have also benefitted from engaging in the corresponding “Produced in Virginia” program, which has facilitated the addition of eight new science and engineering programs. The Rolls-Royce project has an important nexus with international education due to the opportunities for students to participate in exchanges and internships abroad with this very global company. Rolls-Royce has transcended its roots as a British car manufacturer to become a global aerospace conglomerate, with 45% of its research and technology, 40% of its employees, and 50% of its new programs located outside the United Kingdom.

Rolls-Royce has a strong history of partnerships with universities, and the Virginia collaboration had its genesis in relationships that previously existed between the leadership of Rolls-Royce and the University of Virginia. However, as emphasized by those involved in this venture, one institution alone would not have provided enough of an incentive for Rolls-Royce to choose Virginia over several other qualified states. The company’s confidence in the quality of the Commonwealth’s higher education institutions and its graduates played a large part in its decision. State leadership, working through the Virginia Economic Development Partnership, diligently performed the advance and strategic planning that brought all the players to the table. While the combination of institutions retained the company’s interest, negotiators revealed that it was institutional differences that presented the greatest challenges to the process. A natural hesitation to share information and work together in a transparent manner created a barrier to the high level of trust needed to develop the necessary collaboration.

Rolls-Royce has been a marquee project since its inception, but it is not an anomaly. A number of other companies have been drawn to Virginia owing to its capacity for higher education research and development. In 2006, SRI International aligned with James Madison

University, Rockingham County, the City of Harrisonburg, the Shenandoah Valley Partnership and the Virginia Economic Development Partnership to develop the Center for Advanced Drug Research (CADRE) in Rockingham County. SRI International is an independent nonprofit research organization which is recognized as a world leader in research and technology development. While based in Silicon Valley, the organization has divisions in Japan and the United Arab Emirates and promotes its innovations as having global impact in areas such as health, energy, the environment and education. While CADRE is initially focused on drug research related to biothreats and developing treatments for neglected and orphaned diseases, SRI plans to broaden the project to include other Virginia academic institutions and other strategic programs, such as information technology and education. Not only will the partnership produce 100 new jobs in the highly technical and well-compensated field of biotechnology, but SRI's presence in Virginia is expected to bolster Virginia's reputation as a center for biotechnology and provide spinoff opportunities for new companies and additional employment.

The expansion of Canon Virginia's Newport News operations is another economic development success story that has grown from a partnership with Virginia higher education. The company, which is a subsidiary of Canon International, a Japanese company with worldwide operations and presence, has already been a significant employer in the area for 23 years. This new investment of \$600 million will create more than 1000 jobs. A key driver of the expansion decision was the development of a workforce pipeline by the Virginia Community College System and Thomas Nelson Community College, which will produce 880 technicians and supervisors over three years.

Virginia's success stories with Rolls-Royce, SRI International, and Canon demonstrate that the Commonwealth's higher education institutions are a unique commodity that has been successful in attracting substantial global business investment. On a smaller scale, but no less important, are the many small and medium sized Virginia businesses that are benefitting from educational programs designed to provide a skilled workforce to fuel growth and global expansion. The corresponding benefits of job creation and tax revenue provide a major incentive for the state to find innovative ways to bolster university based economic development. For institutions of higher education, investment by corporate partners holds promise for curriculum development and support and opportunities for internships and employment. Other companies may well be interested in following Rolls-Royce's lead in funding academic programs to ensure that partnering institutions can meet their workforce demands. Given the decline in general fund support for higher education in the past decade, this potential may prove to be important.

IV. Blueprint for Future Action

The above review of the context of globalization at Virginia's higher education institutions reveals a wealth of resources in the Commonwealth. At the same time, it is clear that these resources must be maximized if the current and expected future deficits of the Virginia workforce in the global marketplace are to be addressed. The following recommendations, which were developed from discussions with international education administrators, academics, and economic development professionals, are meant to help the institutions and state leadership develop effective collaborative practices. While action on any one recommendation would be a small positive step, taken together they form a viable scheme for leveraging the Commonwealth's resources to ensure our global competitiveness.

A. Recommendations for SCHEV

1. Strengthen relationships with the Virginia Council on International Education (VaCIE) and University Based Economic Development (UBED) by providing a SCHEV staff member as a liaison. The liaison could provide assistance in coordination and information sharing activities in support of economic development initiatives and international education.
2. Explore the potential for the creation of model collaborative international education initiatives such as critical language instruction, which could help save costs and increase participation in globalization activities.
3. Work with the Secretary of Education to obtain input from institutional and government representatives on how to strengthen relationships between economic development interests and higher education.

B. Recommendations for Institutions:

1. Organize knowledgeable, well-connected faculty and staff to develop a system of information-sharing with businesses and other institutions in order to determine areas of potential collaboration.
2. Develop a model for a local economic development pipeline which is able to tap into the existing international connections of faculty and alumni.
3. Compile data that would demonstrate the economic development benefits of current international education initiatives to state leaders.

4. Develop programs to ensure that students joining the Virginia workforce have the global competence required to enable existing Virginia businesses to expand and compete in the international marketplace.
- C. Recommendations for the leadership of the Commonwealth of Virginia:
1. Obtain input from VEDP on how to foster information sharing and collaboration between statewide economic development interests and institutions of higher education.
 2. Develop a process to keep Virginia's congressional delegation informed on a regular basis of opportunities to draw earmarked federal research and development projects and dollars to Virginia institutions.
 3. Consider how best to advocate for federal policies that affect immigration and visa policies for international students, who currently play a vital role in STEM educational programs and jobs.