

HAMPTON ROADS RESEARCH INSTITUTE

MEETING REGIONAL AND STATE GOALS FOR TECHNOLOGY BASED ECONOMIC DEVELOPMENT

“We don’t do a very good job in Virginia of attaining federal research dollars or private research dollars. Part of that is going to require much greater collaboration between colleges and universities. I saw recently we won this major NASA grant (for a new aviation Research Institute in Hampton), but we had tremendous competition instead of cooperation between Virginia’s colleges and universities.”

**Governor Mark Warner
Virginia Business, January
2003**

It is clear from the above quote Governor Warner recognizes the need for Virginia universities to obtain more outside research funding and the importance of collaboration in achieving this goal. Building this capability – and the relationships that sustain it – takes time, commitment and resources. Since 2000 the Hampton Roads region has pursued just such a strategy through the creation and nurturing of the Hampton Roads Research Partnership (HRRP)¹. Up to this time, the Hampton Roads Partnership has funded and supplied staff assistance to the HRRP – but more is needed if the universities in Hampton Roads are to achieve their highest potential as institutions of higher education and as engines for regional and state economic development.

The Hampton Roads Partnership proposes taking the Hampton Roads Research Partnership to a higher level by creating the Hampton Roads Research Institute (Research Institute) to stimulate technology-based economic development in the Hampton Roads region through the expansion of targeted collaborative research, commercialization of intellectual property/business incubation, engagement in regional economic development efforts, and the promotion of collective capabilities. This document, together with the corresponding business plan, seeks to make the case for state funding of the Research Institute.

¹ The Hampton Roads Research Partnership (HRRP) is a partnership among eight academic institutions and two federal research and development laboratories in Hampton Roads, Virginia. The board is comprised of representatives from Christopher Newport University, the College of William & Mary, Eastern Virginia Medical School, Hampton University, Norfolk State University, Old Dominion University, Regent University, Virginia Wesleyan College, NASA Langley Research Center and Thomas Jefferson National Laboratory. The goals of the organization are to increase research capabilities and funding for Hampton Roads and HRRP member institutions, to engage in the region’s economic development efforts and to improve communication of collective capabilities and needs.

To build this capability, the Research Institute will integrate new and existing functions to provide a comprehensive regional capability. To achieve this purpose, the proposed Institute will foster a deeper, more robust relationship between the existing university and federal lab oriented HRRP and the business led Hampton Roads Technology Council (HRTC) and Hampton Roads Technology Incubator (HRTI).

The proposed Research Institute is the culmination of the Hampton Roads Partnership's six years of experience in technology based economic development – beginning with the HRTC's founding in 1997. Moreover, it serves the Commonwealth's stated technology based economic development goals as well. This brief shows the connection between the Research Institute and state goals as articulated in the following documents:

- *Condition of Research at Virginia Colleges & Universities*, May 22, 2002 (“SCHEV Research Report”)
- *Advancing Virginia Through Higher Education The System-wide Strategic Plan for Higher Education*, December 2002 (“SCHEV Strategic Plan”)
- *One Virginia One Future – Virginia Economic Development Strategic Plan*, December 2002 (“Economic Development Strategic Plan”)
- *The Global Digital Economy and the Bold Dominion: Commonwealth of Virginia Strategic Plan for Technology 2002-2006*, September 2002 (“Virginia's Technology Strategic Plan”)

RESEARCH INSTITUTE ACTIVITY: Expansion of Targeted Collaborative Research

The Research Institute will promote leading-edge multi-disciplinary, multi-institutional research in regional technology thrust areas and involve member institutions and regional businesses when appropriate. Emphasis will be placed on large grant efforts involving two or more Research Institute members.

The Research Institute will facilitate collaboration on large grants in technical areas the region's universities could not competitively pursue individually. Collaborating with other regional universities through the Research Institute will provide critical mass in important technology areas, complementing individual university capabilities in today's research environment where, increasingly, federal funding agencies are requiring or “strongly suggesting” cross-institutional collaboration in proposals. Such building of critical mass is particularly important in the current state funding environment. Specifically, the Research Institute will perform the following activities:

- Identify and screen large grant opportunities.
- Build collaborative research teams (including industry where applicable) around an HRRI-designated lead institution.
- Provide seed funding for pilot projects with potential to develop into large scale efforts.
- Provide assistance in proposal development.
- Provide a mechanism for accessing faculty expertise from other universities – for increased breadth.
- Provide a mechanism for adding “soft money” research faculty as needed.
- Provide a mechanism to acquire and administer additional research space as needed.

STATE POLICY ADDRESSED:

The State Council of Higher Education for Virginia (SCHEV) in its groundbreaking report, *Condition of Research at Virginia Colleges & Universities* (SCHEV Research Report), detailed the current situation and causes of Virginia’s university research and development environment. The conclusion, “Virginia is not keeping pace with those states that are making long-term investments in focused areas of research and promoting collaboration among institutions, businesses, government, both of which lead to future scientific discovery, and greater economic prosperity.” The report further states "We believe that Virginia has much to gain by forging a shared vision for academic research, articulating specific goals, crafting concrete strategies to achieve them, and working to maintain the Commonwealth's commitment to invest in this issue over the long-term." We couldn't agree more; which is why the first goal in the Research Institute mission is to bring the various institutions together to focus on collaborative research opportunities and meet ambitions yet achievable research goals.

More specifically, the SCHEV Research Report offers some key findings, two of which are addressed directly by the Research Institute. Finding 1 of the report states “The ability of research universities to attract federal support for R&D activities is driven largely by their ability to align faculty expertise with the federal research agenda.” The process of aligning faculty/institutional expertise with funding opportunities has already begun in Hampton Roads. Under the auspices of the HRRP, and paid for by the Hampton Roads Partnership, a study was conducted by the Research Triangle Institute which identified regional research strengths and matched those against future “hot” technologies and current

regional technology industries. Targeted “thrust areas” were recommended for focused efforts in technologies where matches were found. The objective was to focus research efforts for maximum economic benefit. These recommendations are a cornerstone of the Research Institute business plan.

Finding 8 of the SCHEV Research Report states “Most successful state R&D initiatives share key similar characteristics: 1) focused area(s) of research; 2) long-term and sustained investments in research activities; and 3) collaborative efforts among higher education, government, and business and industry.”

Clearly, the Research Triangle Institute study addresses the first element, “focused areas of research.” Also, by enhancing relationships between two business-oriented organizations (HRTC and HRTI) and a university research organization (HRRP) the Research Institute will increase meaningful cooperation between these sectors as recommended in the third point, “building collaborative efforts among higher education, government, business and industry. The remaining element of Finding 8, “long-term and sustained investments in research activities,” is the purpose of this request for state funding.

In *Advancing Virginia Through Higher Education: The System-wide Strategic Plan for Higher Education* (SCHEV Strategic Plan), SCHEV provides recommendations addressing key findings of the SCHEV Research Report. The strategic plan begins with the following vision for Virginia Higher Education: “Virginia's system of higher education is recognized globally as a model of excellence in learning, leadership, and research, and as a catalyst for economic prosperity and an enhanced quality of life.” Again, the Research Institute supports this state vision with its focus on increased research, economic development, and communication of capability.

The Research Institute business plan, and its implementation of the Research Triangle Institute report, also addresses the second goal of SCHEV’s Strategic Plan to “Increase Virginia's national standing in sponsored research.” The report states “Because university research provides both a bridge to regional and state wide economic prosperity...we must...Increase access to new and existing sources of federal research support by developing a system-wide coordinated research agenda in areas most likely to provide future economic benefit to the Commonwealth.” The Research Institute seeks to coordinate member research agendas in several major thrust areas identified in the Research Triangle Institute study to be more successful in getting federal research grants.

Lastly, the Research Institute’s focus on large, collaborative research grants and its membership which includes the state’s premiere historically black colleges and universities, or HBCUs, (Hampton and Norfolk State) directly supports Secretary’s Initiative 5 of *“The Global Digital Economy and the Bold Dominion: Commonwealth of Virginia Strategic Plan for Technology 2002-2006”* (Virginia’s Technology Strategic Plan). This state initiative calls for “[increasing] federal

research and development funding to industry and Virginia's colleges and universities, including historically black colleges and universities (HBCUs).”

RESEARCH INSTITUTE ACTIVITY: Commercialization of Intellectual Property/Business Incubation

The Research Institute will contribute to the advancement of member institutions as well as the economic well being of stakeholder communities through a systematic commercialization effort involving technologies developed individually or collaboratively by member institutions. Such a capability addresses key recommendations of the Research Triangle Institute study previously mentioned regarding the boosting of HRRP member technology commercialization capabilities as well as the results of a detailed needs survey of HRRP members. The Research Institute’s commercialization efforts will generally focus on the following:

- Providing expert assistance in intellectual property management.
- Providing assistance in choosing the most promising mode of commercialization.
- Providing assistance in implementing the chosen mode of commercialization.
 - Marketing technologies to regional or outside-of-region businesses of all sizes (technology transfer).
 - Helping entrepreneurs establish and successfully operate companies via the Hampton Roads Technology Incubator and related services.
- Identifying sources of venture capital and assisting in obtaining financing.
- Linking university/lab capability with industry needs (extension-like services).
- Producing events that facilitate the networking of member institution and high technology industry research personnel.

STATE POLICY ADDRESSED:

Goal 4 of “*One Virginia One Future – Virginia Economic Development Strategic Plan*,” (Economic Development Strategic Plan) includes a critical component stressing the importance of technology based economic development – including technology commercialization. As stated, the goal seeks to “Support technology businesses and other emerging and developing sectors of the economy, which

are of critical importance to the Commonwealth's global competitiveness." This goal is strongly supported by various aspects of the Research Institute plan, including the section on technology commercialization detailed above.

Goal 4 continues by enumerating several action items for promoting technology-based economic development. The Economic Development Strategic Plan seeks to "Better coordinate university research efforts with economic development activities by developing clearer and more entrepreneurial, business-friendly university IP (intellectual property) policies, and implementing appropriate faculty and graduate student commercialization policies. Provide technical assistance to smaller firms in navigating the process to register, value, and protect their intellectual property." Included in this strategy is to "Provide strategically located niche incubators that match a region's assets and goals with the type of industry to be cultivated, and provide significant support services appropriate to the tenants." The Research Institute seeks to create a regional shared resource for technology commercialization that will not only provide more capability than member institutions have currently, but will enable a "big picture" view of technology developed at member institutions and allow for better management of intellectual property *across* institutions as well. In addition, the Research Institute will offer entrepreneurial support through a relationship with the pre-existing, highly successful, HRTI. Current HRTI clients and alumni employ approximately 110 people (fulltime) and support annual revenues in excess of \$20.0 million.

Goal 4 also seeks to "Implement the recommendations of the Governor's Biotechnology Initiative as and when funds become available." The Hampton Roads region has already played an important role in the Governor's Biotechnology Initiative. In fact, the HRRP brought together the Hampton Roads based representatives to the Biotechnology Initiative to develop a comprehensive response listing regional capabilities available to pursue the initiative. Hampton Roads was the only region in Virginia to provide such a coordinated response. The Research Institute will continue these efforts (Biotechnology is included in the Institute's identified "thrust areas") and provide similar strategic coordination in other technology areas.

Not surprisingly, Virginia's Technology Strategic plan also addresses the need to increase technology commercialization in "Secretary's Initiative 6" which seeks to "Increase commercialization of intellectual property from Virginia's labs, entrepreneurs, and institutions of higher education, and grow entrepreneurial companies." The initiative further states "...technology transfer operations at Virginia's institutions of higher education will contribute to Virginia's economic development goals and will place a higher priority on Virginia-based deals." Increasing commercialization and entrepreneurship are at the core of the Research Institute's technology commercialization activities outlined above. Moreover, a comprehensive technology commercialization capability, coupled with access to technologies from Hampton Roads based universities and the

region's two federal labs, will contribute much to the state's economic development goals.

RESEARCH INSTITUTE ACTIVITY: Engagement in Regional Economic Development Efforts

The Research Institute will actively seek opportunities for member institution human and/or intellectual property assets to be deployed in ways that stimulate regional economic development. HRRI economic development efforts will generally focus on the following:

- Developing relationships with state, regional and local economic development organizations.
- Familiarizing economic development professionals with regional research capabilities.
- Providing marketing assistance to state, regional and local economic development officials in recruiting technology-based companies to Hampton Roads, including:
 - Targeting high technology prospect companies.
 - Linking university/lab capability with economic development efforts.
 - Participating in marketing trips.
 - Participating in in-region prospect visits.
- Participating in state, regional and local economic development conferences, events or commissions
- Conducting technology-based economic development policy studies and evaluations.
- Providing educational programs, networking events and opportunities, and industry information to the region's high tech companies working in conjunction with the Hampton Roads Technology Council.

STATE POLICY ADDRESSED:

As noted previously, the Commonwealth's Economic Development Strategic Plan addresses technology based economic development in Goal 4, "Support technology businesses and other emerging and developing sectors of the economy, which are of critical importance to the Commonwealth's global competitiveness." Generally speaking, economic prosperity is a driving factor behind state investments in higher education and research. This same motivation

drove the Hampton Roads Partnership (among others) to establish, respectively, the HRTC, HRTI, HRRP and now the Research Institute. As such, economic development is woven into all of the Research Institute's functions. Research expenditures in and of themselves provide stimulus to the regional economy. The impacts of technology commercialization are well known and addressed in the previous section. Communication of collective capabilities, which will be covered in the next section, is simply the communications function of a comprehensive economic development marketing strategy. And, economic development in general will be enhanced through better integration with state, regional and local economic development entities and the technology business community as detailed above.

The importance of connecting with existing economic development efforts is also reflected in Virginia's Technology Strategic Plan, Secretary's Initiative 8 "Promote technology-based economic development in Virginia by growing technology companies...Virginia will host a premier business development environment, in which new companies easily access assistance in tapping the global marketplace and state organizations work together seamlessly to attract new companies and assist companies to grow, particularly those at early stages of development."

RESEARCH INSTITUTE ACTIVITY: Promotion of Collective Capabilities.

A final way the Research Institute will provide value will be to effectively market the collective capability of member institutions at the regional, state and national level by:

- Developing an internet presence via an expanded, reformulated HRRP website.
- Aggressively promoting local media coverage of Institute activities.
- Developing and making marketing materials describing HRRP available to regional economic development organizations, educational institutions, high technology industry and governmental agencies.
- Educating relevant departments of local government about HRRP and its member institutions.
- Educating relevant departments of state government about HRRP and helping establish a recognized role for HRRP member institutions in the Commonwealth of Virginia's various university research initiatives.

- Showcasing Hampton Roads as a center for advanced research and technology development.
- Working with member institutions to promote their capabilities within the region, to various funding agencies, and to entities external to the region (industry, etc.) to enhance national visibility.
- Communicating capability to state and federal legislators for the purpose of obtaining funding for member institutions and institute activities.
- Developing and sponsoring technical and business related events/conferences to promote member institution capability and to facilitate outside partnerships with industry and other funding sources.

STATE POLICY ADDRESSED:

The SCHEV Strategic Plan begins with the following vision: “Virginia's system of higher education is recognized globally as a model of excellence in learning, leadership, and research, and as a catalyst for economic prosperity and an enhanced quality of life.” The Research Institute’s communications program will help the Commonwealth achieve this vision by publicizing the capabilities, achievements and potential of institutions in the Hampton Roads region.

Furthermore, in Goal 2 of the SCHEV Strategic Plan, “Increase Virginia's national standing in sponsored research” the Commonwealth seeks to “Promote the commercialization of intellectual property by marketing and publicizing widely the commercialization of research and other intellectual property from the Commonwealth's major research institutions.” By integrating a commercialization function with a significant communications capability, the Research Institute will play a major role in increasing awareness of Virginia as a place where leading edge technologies are developed and brought to market.

Conclusion

The state’s Technology Strategic Plan calls for “Exponential change, not incremental change”, “...increasing cooperation across traditional borders” and “Urgency.” The Hampton Roads Research Institute provides just such exponential change through collaboration among sectors to a degree found nowhere else in the Commonwealth. The urgency is to sufficiently fund the effort so it can begin to contribute to Hampton Roads’ and Virginia’s prosperity.

“State government has failed to work as a real partner with Virginia’s colleges and universities. It’s time to create a new, cooperative relationship that promotes innovation and empowers colleges and universities to meet Virginia’s changing intellectual and economic needs.”

**Governor Mark Warner
Virginia Business, October
2001 Gubernatorial
Candidate Questionnaire**

During the campaign, Governor Warner acknowledged the state’s previous shortcomings in working with its colleges and universities. While we recognize that the Virginia’s significant fiscal difficulties have limited the ability to rectify this problem, the situation is much the same today as it was in 2001. Funding of the Hampton Roads Research Institute is one way to help higher education in Hampton Roads and simultaneously boost technology based economic development in the state’s second largest region.