

Six-Year Plans (2011)
Virginia Logistics Research Center
ACADEMIC PLAN

Instructions: In the column entitled "Academic and Support Service Strategies for Six-Year Period (2012-2018)," please provide 2-3 sentences detailing strategies (for the three biennia of this six-year period) associated with each objective of the "Preparing for the Top Jobs of the 21st Century: The Virginia Higher Education Opportunity Act of 2011." The information provided should be macro-level information with sufficient detail for the reader to understand your general approach.

Priority Ranking	Within Tuition Increase	ACADEMIC AND SUPPORT SERVICE STRATEGIES FOR SIX-YEAR PERIOD (2012-2018)								
		Biennium 2012-2014 (7/1/12-6/30/14)				Biennium 2014-2016 (7/1/14-6/30/16)		Biennium 2016-2018 (7/1/16-6/30/18)		
		Strategies	TJ21 Objectives	Cost: Incremental, Savings, Reallocation				Strategies	Strategies	
				2012-2013		2013-2014				
Amount	Within Increase			Amount	Within Increase					
1	no	Establish a partnership between Longwood, UVA, and VSU to develop the Virginia Logistics Research Center (VLRC) that will focus on modeling and simulation for defense and business. The center will be unique featuring a collaborative research environment that brings together university, industry, military and other governmental partners under one non-profit entity umbrella organization. The Center will provide transformational improvements in the design and analysis of logistics systems. This request includes \$450,000 in Partnership infusions (\$150,000 for each institution), four faculty members (salaries and benefits) and start-up costs for these faculty in the first year. The second year includes three additional faculty (salaries and benefits), a senior technician and start-up costs for these employees.	E. 13: Other initiatives	Incremental:	\$1,587,500	\$0	\$1,715,625	\$0	Establish partnership between academic partners, Department of Defense, and strategic fortune 500 corporations for sustainable collaborative effort in logistics research. Provide resources that help reduce the cost of sustainment operations including crisis response by accelerating technology from assessment to product/service implementation.	Train next generation of technology leaders, providing market ready experience for students and connecting industry and defense community stakeholders w/students. Position Virginia as global leader in modeling & simulation, a national critical technology.
				Savings:	\$0	\$0	\$0	\$0		
				Reallocation:	\$0	\$0	\$0	\$0		

Total 2012-2014 Costs				
Incremental (Included in Financial Plan line 17)	\$1,587,500	\$0	\$1,715,625	\$0
Savings	\$0	\$0	\$0	\$0
Reallocation	\$0	\$0	\$0	\$0

Six-Year Financial Plan for Educational and General Programs, Incremental Operating Budget Need
2012-2014 Biennium
(Assuming No Additional General Fund)

Items	2012-2013		2013-2014	
	Amount	Within Increase	Amount	Within Increase
Total Incremental Cost from Academic Plan³	\$1,587,500	\$0	\$1,715,625	\$0
Increase Faculty Salaries ²	\$0	\$0	\$0	\$0
Faculty Salary Increase Rate ⁴	0.00%	0.00%	0.00%	0.00%
Increase Number of Full-Time Faculty ³ (\$)	\$0	\$0	\$0	\$0
Increase Number of Full-Time Faculty ³ (FTE)	0.00	0.00	0.00	0.00
Increase Number of Part-Time Faculty ² (\$)	\$0	\$0	\$0	\$0
Increase Number of Part-Time Faculty ² (FTE)	0.00	0.00	0.00	0.00
Increase Number of Support Staff (\$)	\$0	\$0	\$0	\$0
Increase Number of Support Staff (FTE)	0.00	0.00	0.00	0.00
Library Enhancement	\$0	\$0	\$0	\$0

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Priority Ranking	Within Tuition Increase	ACADEMIC AND SUPPORT SERVICE STRATEGIES FOR SIX-YEAR PERIOD (2012-2018)						Biennium 2014-2016 (7/1/14-6/30/16)	Biennium 2016-2018 (7/1/16-6/30/18)
		Biennium 2012-2014 (7/1/12-6/30/14)				Cost: Incremental, Savings, Reallocation			
		Strategies	TJ21 Objectives	2012-2013		2013-2014			
				Amount	Within Increase	Amount	Within Increase		
		Technology Enhancement (\$)		\$0	\$0	\$0	\$0		
		Technology Enhancement (FTE)		0.00	0.00	0.00	0.00		
		O&M for New Facilities		\$0	\$0	\$0	\$0		
		Utility/Fuel Cost Increases		\$0	\$0	\$0	\$0		
		Add'l In-State Student Financial Aid From Tuition Revenue		\$0	\$0	\$0	\$0		
		Other:							
		Faculty Equity, Retention and Promotion Pool		\$0	\$0	\$0	\$0		
		A/P and Classified Equity and Retention Pool		\$0	\$0	\$0	\$0		
		Campus Diversity (\$)		\$0	\$0	\$0	\$0		
		Campus Diversity (FTE)		0.00	0.00	0.00	0.00		
		Fixed Cost Increases (Maintenances, Contracts, etc.)		\$0	\$0	\$0	\$0		
		Campus Safety and Security		\$0	\$0	\$0	\$0		
		Total Additional Funding Need		\$1,587,500	\$0	\$1,715,625	\$0		

Notes:

- (1) Enter staff FTE change over the FY2012 level in appropriate columns.
- (2) If planned, enter the cost of any institution-wide increase.
- (3) Please ensure that these items shall not be double counted if they are already included in the incremental cost of the academic plan.**
- (4) Enter planned annual faculty salary increase rate in Cell B22 and D22. Any salary increase entered here will be counted when calculating the gap to reach the 60th percentile in the future.

Six-Year Plans (2011)

LONGWOOD UNIVERSITY

FINANCIAL AID PLAN

Instructions: Complete the table for the Actual 2010-11 and Estimate 2011-12 distribution of 2012-13 and 2013-14 will be automatically calculated based on the estimated 2011-12 distribution by entering values instead of using the formulas.

Allocation of Tuition Revenue Used for Student Financial Aid			
2010-11 (Actual)			
T&F Used for Financial Aid	Gross Tuition Revenue	Tuition Revenue for Financial Aid	Distribution of Financial Aid
In-State Undergraduate			
Out-of-State Undergraduate			
In-State Graduate			
Out-of-State Graduate			
In-State 1st Professional			
Out-of-State 1st Professional			
Total	\$0	\$0	\$0
In-State Sub-Total	\$0	\$0	\$0

2011-12 (Estimated)			
T&F Used for Financial Aid	Gross Tuition Revenue	Tuition Revenue for Financial Aid	Distribution of Financial Aid
In-State Undergraduate	\$0		
Out-of-State Undergraduate	\$0		
In-State Graduate	\$0		
Out-of-State Graduate	\$0		
In-State 1st Professional	\$0		
Out-of-State 1st Professional	\$0		
Total	\$0	\$0	\$0
In-State Sub-Total	\$0	\$0	\$0

2012-13 (Planned)			
T&F Used for Financial Aid	Gross Tuition Revenue	Tuition Revenue for Financial Aid	Distribution of Financial Aid
In-State Undergraduate	\$0		
Out-of-State Undergraduate	\$0		
In-State Graduate	\$0		
Out-of-State Graduate	\$0		
In-State 1st Professional	\$0		
Out-of-State 1st Professional	\$0		
Total	\$0	\$0	\$0
In-State Sub-Total	\$0	\$0	\$0

Additional In-State	\$0	\$0	\$0
Additional In-State from Fin Plan		\$0	

2013-14 (Planned)			
T&F Used for Financial Aid	Gross Tuition Revenue	Tuition Revenue for Financial Aid	Distribution of Financial Aid
In-State Undergraduate	\$0		
Out-of-State Undergraduate	\$0		
In-State Graduate	\$0		
Out-of-State Graduate	\$0		
In-State 1st Professional	\$0		
Out-of-State 1st Professional	\$0		
Total	\$0	\$0	\$0
In-State Sub-Total	\$0	\$0	\$0
Additional In-State	\$0	\$0	\$0
Additional In-State from Fin Plan		\$0	

f financial aid by category. The planned distributions for 2012-
n. Adjust the 2012-13 and 2013-14 distributions, as necessary,

Six-Year Plans (2011) LONGWOOD UNIVERSITY

Six-Year Financial Plan for Tuition and Fee Increases and Nongeneral Fund Revenue Estimates

Items	2011-2012		2012-2013			2013-2014			2014-2015	2015-2016	2016-2017	2017-2018
	Student Charge	Total Revenue	Student Charge	Rate Increase	Total Revenue	Student Charge	Rate Increase	Total Revenue	Total Revenue	Total Revenue	Total Revenue	Total Revenue
E&G Programs												
In-State Undergraduate												
Out-Of-State Undergraduate												
In-State Graduate												
Out-Of-State Graduate												
Other E&G NGF												
Total E&G Revenue												
Auxiliary Program												
Undergraduate												
Graduate												
Other Auxiliary NGF												
Total Auxiliary Revenue												
Total Tuition and Fees												
In-State Undergraduate												
Out-Of-State Undergraduate												
In-State Graduate												
Out-Of-State Graduate												
Student Financial Aid (Program 108)												
Sponsored Programs (Program 110)												
Unique Military Activities												
Workforce Development												
Other (Specify)												

Six-Year Plans (2011)
LONGWOOD UNIVERSITY

Foregone Tuition Revenue As A Result of Tuition Waivers

Educational and General Programs

(Please provide information and add programs to the list as appropriate)

Program	2012-13					2013-14				
	In-State Undergraduates	In-State Graduates	Out-of-State Undergraduates	Out-of-State Graduates	Total	In-State Undergraduates	In-State Graduates	Out-of-State Undergraduates	Out-of-State Graduates	Total
Academic Common Market										\$0
Out-of-State Graduates										\$0
Senior Citizens										\$0
Military Dependents										\$0
Consortium										\$0
1-4-1 Exchanges										\$0
Administrative										\$0
Total										\$0

SIX-YEAR PLAN

VIRGINIA LOGISTICS RESEARCH CENTER

LONGWOOD UNIVERSITY, VIRGINIA STATE UNIVERSITY AND UNIVERSITY OF VIRGINIA

Executive Summary

The Virginia Logistics Research Center (VLRC) is being established to provide industry with transformational improvements in the design and analysis of logistics systems for military, commercial, consumer, and emergency applications. The VLRC will be located in a specially designed facility near Richmond, VA, USA and will develop solutions that significantly improve the ability to move goods and services from the point of creation to the point of consumption. The research focus of the VLRC will be on the integrated logistics system and its economic cost and dependability. The underlying technologies that will be used and developed to support the VLRC research focus include modeling and simulation and global public policies and practices.

A unique feature of the VLRC is the collaborative research environment designed to accelerate the transition of technologies from creation to product implementation. VLRC members will include industrial manufacturers, transportation companies, and suppliers as well as service providers from military, commercial, consumer, and emergency applications. The VLRC research staff will work closely with its members on industry and government directed research projects that address critical challenges in the development of advanced logistics systems. Close communication between sponsors and research staff will ensure timely delivery of results that can be transitioned quickly to commercialization. Integration of VLRC staff with its academic partners, including Longwood University, University of Virginia and Virginia State University, will ensure that projects leverage the resources of the universities for the benefit of members.

The value proposition of VLRC is the access provided to solutions that will significantly improve the competitive position of its members. All members will be able to access the results of *generic research* funded by a portion of member fees to address the needs of a broad spectrum of members. This funding mechanism will allow companies to share the risk associated with performing research by combining their resources into larger projects. Certain members will also be able to perform *directed research*, a type of research that will allow companies to work directly with VLRC staff on projects that address the needs of that member. The value of directed research to the member is the access to an efficient research organization and the equipment housed in the VLRC facility. The organization of VLRC enables research to be performed at a lower cost than building the capability internally, and access to specialized equipment enables efficient transition of research from VLRC to product implementation.

VLRC also adds value by streamlining access to intellectual property. Members who fund generic research will be entitled to a non-exclusive, royalty-free license of intellectual property generated from all generic research. Members who fund directed research will own any intellectual property generated from sponsored projects, thus ensuring their competitive position that results from VLRC activities.

VLRC will be a Virginia non-stock corporation founded jointly by Longwood University, University of Virginia, and Virginia State University. VLRC will also leverage significant investments in faculty, students, and equipment at the founding universities. The VLRC business model contemplates growth of the VLRC to a membership of 30 companies within 10 years, with associated annual research growth to over \$16 million. We expect that VLRC will create over 50 full-time jobs in this 10-year period and support the activities of more than 70 students per year enrolled in programs at the academic institutions. Research will begin with the partner universities in 2013.

The Virginia Logistics Research Center (VLRC) is being created to provide the next generation of logistics systems solutions. The VLRC is a collaborative effort among Longwood University, University of Virginia, and Virginia State University. The VLRC will position the Commonwealth of Virginia as a global Center of Excellence for logistics in the 21st Century. VLRC will be incorporated as a 501(c)(3), not-for-profit, non-stock corporation, chartered to conduct research and development (R&D) for the creation of efficient, cost effective, and dependable logistics systems. The VLRC mission is to create transformational improvements in the quality and cost of logistics systems to solve practical problems for industry and government.

The objective shared by the VLRC members is to catalyze problem solving and innovations in logistics systems. A key differentiator of the VLRC is the focus on *applied* R&D; that is, innovation and testing in a solutions-focused environment that can be rapidly migrated into a member's operations to add value to a member's bottom line.

The VLRC is designed to fill the gap between basic research and product commercialization. This is accomplished in part by placing members from all stages of the product development pipeline into the same facility to work collaboratively. Universities, including their students, will work together in the VLRC to bridge the gap between basic research and commercialization and bring new ideas to fruition in the marketplace.

The VLRC research program is focused on three main objectives:

- To create new solutions to logistics problems for a variety of customers including military, government, commercial, and consumer.
- To translate those new solutions into commercial practice that solves the real needs of the logistics industry in practical ways.
- To focus on the logistics system with an emphasis on the word "system."

The VLRC research will focus on five main topics as they relate to logistics systems:

- Dependability
- Economic Cost
- Global Supply Chains
- Modeling and Simulation
- Public Policy

Modeling and simulation involves four main objectives:

1. Development of accurate models to be used in simulations
2. Extraction of data from real processes as needed for models and simulations
3. Understanding and characterization of human interfaces and their impact on logistics systems
4. Development of simulation frameworks to support the required multidisciplinary modeling and simulation needed in logistics systems

To support the research program, VLRC has established three industry membership tiers:

- Members who join VLRC during its formative development stage and agree to a long-term commitment to VLRC will become Organizing Industry Members. Along with Longwood University, University of Virginia, and Virginia State University, the VLRC Organizing University Members, Organizing Industry Members will have a seat on the Board of Directors that sets overall VLRC governance policies, strategy, and organizational structure and membership fees. The Board of Directors also approves all additions to the VLRC membership.

- Organizing Industry Members join VLRC for a minimum of five years; however, a longer term relationship is expected because of the value VLRC provides to members, as detailed below. Annual membership fees will be initially \$300,000; and 50% of the fee can be applied to directed research at VLRC that is directed by the member. Organizing Industry Members and Organizing University Members contribute to the start-up costs of the VLRC by each providing a one-time fee of \$150,000.

The strength of VLRC will be its collaborative research environment that combines the expertise of industry, government, and university members. Membership fees will fund two types of research projects, each with a specific value proposition for the sponsor:

- All members will contribute to a *generic research* pool that will fund a set of projects chosen by the members to solve problems of interest to multiple industry partners. The value proposition of generic research is the amplification of resources that occurs by pooling member resources and taking advantage of the unique facilities available to VLRC members. Research staff at VLRC will form project teams that work closely with industry sponsors to respond quickly to the needs of the members. Intellectual property developed from all generic research will be available to all VLRC members via a non-exclusive, royalty-free license.
- A subset of members will contribute a portion of their membership fee to fund *directed research*. Directed research projects are funded by a single sponsor, or a partnership of sponsors, and the results are shared only with that collection of sponsors. The value proposition of directed research is the ability of a sponsor to hire a team of VLRC technical experts that will utilize the unique facilities in VLRC. The value proposition is enhanced significantly by the fact that sponsors will own any intellectual property developed as a result of directed research.

The VLRC is an applied research center focused on accelerating the development and commercialization of logistics systems solutions. The focus of the VLRC research program is to provide the foundation for transformational step changes in logistics systems. As an expected result, VLRC Industry Members will:

- Become part of a collaborative research community that sets the direction of future technology developments for logistics systems.
- Become integrally involved with the leading technology developments in logistics systems; and receive a right to a non-exclusive, royalty-free license to all intellectual property developed through the membership supported generic research program.
- Be able to direct the work of VLRC research staff in directed research projects, and own the intellectual property that results from directed research.
- Have access to academic faculty as well as their students who will be future employees in the logistics industry.

The VLRC will work with its industry and government partners to establish workforce adaptability metrics that support a variety of competitive advantages for logistics services including quality improvement, better customer service, learning curve acceleration, and economy of scope and depth. The research laboratory space will be a mix of computational laboratories and hands-on large scale data mining and management laboratories. A typical research team might consist of 1 or 2 principal scientists, 1 or 2 senior research scientists, 3 to 4 graduate students, and 1 to 2 undergraduate students. Twelve to 15 research teams will be involved.

The VLRC project staff will include scientists and engineers with expertise in the field of human behavior modeling, economic cost modeling, risk assessment, utility theory, and logistics services. The project

staff will work directly with research sponsors to ensure excellent communication and timely delivery of project results. VLRC staff will also work closely with the faculty and students of university members to ensure maximum leveraging of the academic assets for the benefit of VLRC members.

The Core Team Planning Committee responsible for the development of the VLRC includes:

Crater Planning District	Longwood University
Virginia State University	University of Virginia
Logistics Management Resources	Boehringer Ingelheim Chemicals, Inc.
Virginia Economic Development Partnership	Army Logistics University

ROLES OF THREE INSTITUTIONS IN VLRC:

- Longwood University, Virginia State University and the University of Virginia have been involved in the formation of the VLRC and will participate in forming the Board of Directors.
- All three institutions are responsible for recruiting several business corporations as Tier I members, with each business paying a membership fee of \$200,000 annually.
- All three institutions are going to dedicate a full-time faculty member for VLRC research and begin to form research teams.
- Undergraduate and graduate students from all three institutions will be involved in research projects.
- Longwood University will bring in the “soft side” of Modeling and Simulation, which includes the areas of transportation, points of purchase, and coordination through the College of Business and Economics.
- Virginia State University will bring in the expertise of their engineering and mathematics faculty to explore technology-intensive knowledge transfer and management within logistics service networks and related workforce planning and agility metrics.
- The University of Virginia will participate and fill in research assets as needed from their School of Engineering and Applied Science as well as their business, legal and public policy programs.

INVESTMENT BY INSTITUTIONS TO DATE:

- This initiative has been underway for several years and has utilized the expertise of faculty, deans, and researchers to develop the plan and establish the VLRC. The group has been meeting weekly for the past year, so there has been considerable faculty and staff release time, as well as travel, printing, telephone, and other costs associated with the start-up.

LONGWOOD UNIVERSITY COSTS:

FY 2013: \$559,375

Comprised of a one-time payment of \$150,000 partnership infusion of capital and \$159,375 (includes salary and benefits) for one FTE faculty position that will be committed to the VLRC operation and \$250,000 for start-up costs for that faculty member.

FY2014: \$568,750

Add a second faculty position at \$159,375 (includes salary and benefits) that will be committed to the VLRC operation plus \$250,000 in start-up costs for that faculty member.

UNIVERSITY OF VIRGINIA COSTS:

FY 2013: \$559,375

Comprised of a one-time payment of \$150,000 partnership infusion of capital, \$159,375 (includes salary and benefits) for one FTE faculty position that will be committed to the VLRC operation, and \$250,000 for start-up costs for that faculty member.

FY2014: \$568,750

Add a second faculty position at \$159,375 (includes salary and benefits) that will be committed to the VLRC operation plus \$250,000 in start-up costs for that faculty member.

VIRGINIA STATE UNIVERSITY COSTS:

FY 2013: \$468,750

Comprised of a one-time payment of \$150,000 partnership infusion of capital, \$318,750 (includes salary and benefits at \$159,375 each) for two FTE faculty positions that will be committed to the VLRC operation.

FY2014: \$578,125

Add a third faculty position at \$159,375 and one Senior Technician at \$100,000 (both positions include salaries and benefits) that will be committed to the VLRC operation.