

*STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA*

**PROGRAM PROPOSAL COVER SHEET**

1. Institution: Virginia Polytechnic Institute and State University	2. Program action (Check one):  New program proposal <input checked="" type="checkbox"/> <u>  x  </u> Spin-off proposal <input type="checkbox"/> <u>      </u> Certificate proposal <input type="checkbox"/> <u>      </u>
3. Title of proposed program: Real Estate	4. CIP code: 52.1501
5. Degree designation: Bachelor of Science	6. Term and year of initiation: Fall 2013
7a. For a proposed spin-off, title and degree designation of existing degree program	
7b. CIP code (existing program)	
8. Term and year of first graduates: Spr 2015	9. Date approved by Board of Visitors:
10. For community colleges: date approved by local board date approved by State Board for Community Colleges	
11. If collaborative or joint program, identify collaborating institution(s) and attach letter(s) of intent/support from corresponding chief academic officers(s)	
12. Location of program within institution (complete for every level, as appropriate). Departments(s) or division of Real Estate School(s) or college(s) of Architecture and Urban Studies Campus(es) or off-campus site(s) _____ Virginia Tech Blacksburg VA _____ <input checked="" type="checkbox"/> _____ Distance Delivery (web-based, satellite, etc.) <input type="checkbox"/> Not immediately _____	
13. Name, title, telephone number, and e-mail address of person(s) other than the institution's chief academic officer who may be contacted by or may be expected to contact Council staff regarding this program proposal.  Dr. Kevin Boyle, Professor, Dept of Agricultural and Applied Economics, 540-231-2907, <a href="mailto:kjboyle@vt.edu">kjboyle@vt.edu</a>  Dr. Robin Panneton, Director, Office of Degree Management, 540-231-9770, <a href="mailto:panneton@vt.edu">panneton@vt.edu</a>	

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## I. Description of the Proposed Degree Program

### Overview

Virginia Tech requests approval for a new Bachelor of Science (B.S.) degree in Real Estate to commence in the fall semester of 2013. The B.S. degree in Real Estate will be a comprehensive, interdisciplinary academic program that transcends traditional college boundaries, while building on existing strengths in six colleges – *College of Agriculture and Life Science, College of Architecture and Urban Studies, Pamplin College of Business, College of Engineering, College of Liberal Arts and Human Sciences, and College of Natural Resources and Environment.*

The real estate industry faces two major challenges. The first is a lack of trust by the public in the wake of the recent recession that was fueled in part by the national collapse of the real estate market. The second challenge is to build sustainable living and work space for a projected 42% growth in the U.S. population by 2050; the U.S. Bureau of the Census projects that the U.S. population will grow from 310 million in 2010 to 439 million in 2050.

What has been observed in recent years is the collapse of a “bubble” in the real estate markets (Herring & Wachter, 2002). A bubble occurs when real estate prices become artificially inflated. One measure of a bubble is the ratio of the median home price to median income, which is a common indicator of the affordability of housing. The average value of this indicator from 1980 to 2000 was about 3.35 and showed little variation (Fernald, 2011b). In 2000 this indicator began to rise and reached nearly 4.75 in 2005 and then declined back to the long-run average in 2010.

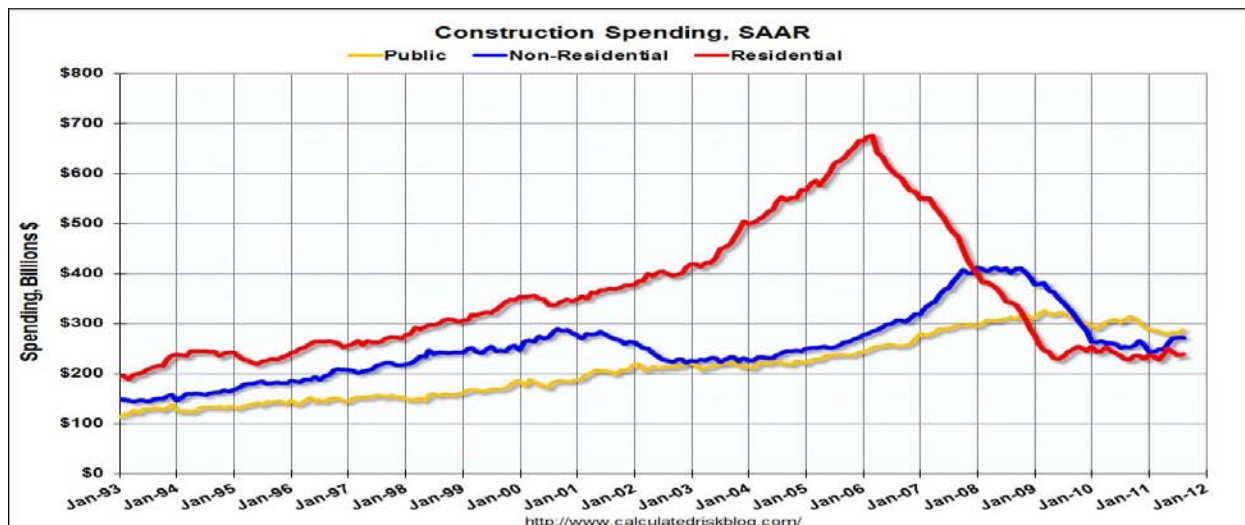
This boom and bust of the real estate bubble is apparent when examining construction spending (Figure 1). Construction spending in residential real estate peaked in early 2006 and then declined sharply. Notably, construction spending in non-residential (commercial) and public sectors did not experience such a dramatic peak. Commercial construction expenditure peaked in 2008 and did not start to decline until early 2009. Public sector construction expenditures showed steady growth and have been fairly flat since 2008.

Cycles in real estate markets, or any type of market, are not unusual. Lee (2008) finds that each real estate cycle over the past 50 years has lasted about 10 years and this is similar to the market cycles for most products. What is unique about real estate cycles is that they affect people’s housing choices, a key element of the American dream, and there are consequent spillover effects into higher unemployment and lower incomes.

It is unlikely that cycles in real estate markets are going to go away. Ben Bernanke, Chairman of the Federal Reserve Bank, has argued that regulatory failure was the cause of the housing bubble. Real estate and banking officials operate within the rules set out in federal and state legislation, and Mr. Bernanke argues that:

*“Stronger regulation and supervision aimed at problems with underwriting practices and lenders’ risk management would have been a more effective and surgical approach to constraining the housing bubble than a general increase in interest rates”*

(<http://www.nytimes.com/2010/01/04/business/economy/04fed.html>, accessed October 25, 2011).



**Figure 1. Recent Trends in Real Estate Markets as Reflected in Construction Spending**  
 (Source: <http://www.calculatedriskblog.com/2011/10/construction-spending-increased-in.html>)

Looking forward, the key consideration is how leaders in the real estate industry react to new regulations promulgated from the crash of the housing bubble, and plan for and adapt to future market cycles. The BS in Real Estate will prepare students to better understand market complexities and to be leaders in effecting change to minimize the negative effects of real estate market cycles.

In addition to developing better approaches to managing fluctuations in real estate markets, future executives in the real estate industry are faced with a number of challenging social and environmental considerations as they expand the built environment to accommodate a 42% growth in the U.S. population over the next four decades. In addition, Nelson (2004) projects that half of the buildings Americans lived and worked in 2000 will be replaced by 2030. Replacing aging infrastructure and accommodating population growth and will require real estate executives to address sustainability issues in new and unique ways. Selected challenges include:

- Affordable Housing – Over the period of the recent real estate bubble the number of extremely low-income renters rose from about 9 million in the U.S. to a little over 10 million, with no appreciable increase in the supply of low-income housing units (Fernald, 2011b). Concurrently, renter incomes declined while rent and energy costs rose sharply (Fernald 2011a). This suggest that it is not only the crash of a real estate bubble that can have negative consequences, but the peak of a real estate bubble can negatively affect the economically disadvantages segments of the population. Developing novel approaches to the development of affordable housing is a crucial challenge for the real estate industry.
- The U.S. EPA is in the process of promulgating rules to strengthen storm-water regulations related to commercial and residential development with final action scheduled for December 2014 (<http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm>, accessed

September 4, 2012). This issue is of particular relevance to Virginia and the mid-Atlantic region because the rule making includes “*provisions specific to the Chesapeake Bay watershed*” that are likely to impact the majority of communities in the Commonwealth and other mid-Atlantic states

(<http://www.chesapeakebay.net/watersheds.aspx?menuitem=14603>, accessed October 25, 2011). The rule changes will require modifications in the existing built environment and a change in how future developments are constructed.

- Energy use is of global concern. Miller, Spivey and Florance (2008) compared Energy Star and Leadership in Energy and Environmental Design (LEED) certified office buildings with office buildings that did not have these certifications. They found that green investments to attain Energy Star or LEED certification are justified on private profit motivations alone and do not require consideration of the larger public benefits to justify. Demeisi and McDonald (2011) found that office buildings with these certifications had higher occupancy rates and higher prices per square foot than buildings without these certifications, but that buildings with these certifications took longer to pay off due to the larger capital investments.

Tomorrow’s real estate professionals will need to understand aspects of modern technology, while including considerations of important legal, social and environmental concerns in the development and management of real estate projects while being financially savvy. These adjustments in the real estate industry highlight the need for broadly trained graduates to enter the industry who understand a variety of academic disciplines and can work in a team environment to solve important and complex issues related to real estate development and management of the built environment. Students cannot be focused on just one element of the real estate industry because the demand for housing and commercial real estate space is and will continue to change, and successful real estate professionals need to be able to adapt to these multifaceted changes.

The Virginia Tech *Mission Statement* is:

*“Virginia Polytechnic Institute and State University (Virginia Tech) is a public land-grant university serving the Commonwealth of Virginia, the nation, and the world community. The discovery and dissemination of new knowledge are central to its mission. Through its focus on teaching and learning, research and discovery, and outreach and engagement, the university creates, conveys, and applies knowledge to expand personal growth and opportunity, advance social and community development, foster economic competitiveness, and improve the quality of life.”*

The B.S. in Real Estate will address the teaching and learning component of the mission by training the next generation of real estate professionals who are prepared to advance social and community development and improve the quality of life through minimizing the negative effects of recurrent real estate cycles and advancing the sustainability of the existing and new built environments to improve social and environmental considerations.

The academic program will be a state, regional, national and international leader in providing students with cutting-edge academic training and practical experience in real estate project planning through management of properties. This academic training will include a basic

curriculum that ensures students are well grounded in communication and analysis skills, disciplinary courses to develop knowledge needed to be successful in the real estate industry, real estate courses, field experiences and internships that facilitate experiential learning, and a cap-stone studio course that assists students in integrating their interdisciplinary training to actual real-estate projects. A key goal is to attract highly-qualified students who upon graduation will become future leaders in the real-estate industry.

### Curriculum

The curriculum for the B.S. in Real Estate requires completion of 120 credit hours that includes satisfying the Universities' *Curriculum for a Liberal Education* requirements (36 credits), required real-estate courses (35 credits), required communication and English courses (6 credits), and restricted real-estate electives (21 credits). The remaining 22 hours are free electives. See Table 1 below.

### **Curriculum for a Liberal Education Courses**

The subject areas covered are:

- Area 1 - Writing and Discourse (6 credits)
- Area 2 - Ideas, Cultural Traditions, and Values (6 credits)
- Area 3 - Society and Human (6 credits) (Introductory Economics recommended)
- Area 4 - Scientific Reasoning and Discovery (8 credits) (Physics, Chemistry, Geosciences or Biology recommended)
- Area 5 - Quantitative and Symbolic Reasoning (6 credits) (Calculus recommended)
- Area 6 - Creativity and Aesthetic Experience (1 credit)
- Area 7 - Critical Issues in a Global Context (3 credits)

This is a maximum of 36 credits without advanced placement credits.

### **Real Estate Requirements**

The real-estate major will require seven real estate courses that currently exist at Virginia Tech.

- AAEC 4754 Real Estate Law (3 credits)
- AAEC 4764 Real Estate Appraisal (3 credits)
- AHRM 2676 Residential Property Management II (3 credits)
- AHRM 4684 Managing and Leasing Commercial Properties (3 credits)
- FIN 3104 Introduction to Finance (3 credits)
- FIN 4154 Real Estate Finance & Investment (3 credits)
- MKTG 4734 Real Estate Marketing (3 credits)

A unique aspect of the degree program will be a set of six required real estate courses (course designator = REAL) designed to integrate students' interdisciplinary knowledge and to provide practical experience within the academic program. These new courses take students from an introduction to real estate to a six credit hour, two semester senior capstone experience. The

courses integrate disciplinary knowledge, develop team work and provide practical experience. A listing of these required core courses follows (full descriptions of the REAL courses can be found in Appendix A):

- REAL 2004 Principles of Real Estate (3 credits)
- REAL 2014 Careers in Real Estate (1 credit)
- REAL 3014 Professional Development in Real Estate (1 credit)
- REAL 3024 Applied Real Estate Development (3 credits)
- REAL 4075-4076 Real Estate Studio (6 credits, 2 semesters)

All of the REAL courses are new courses that are created for this major.

Students will be required to take two courses in addition to their CLE courses to advance their oral and written communication skills:

- COMM 2004 Public Speaking (3 credits)
- ENGL 3774 Business Writing (3 credits)

### **Restricted Elective Courses**

Students will take at least 21 credits of restricted electives from a variety of courses offered across campus. Working with their advisor in the real-estate program, students will select a set of courses that enhances the depth of their knowledge in a specific area of the real-estate profession with at least 50% of the courses at the 3000 and 4000 level, while allowing some courses at the 1000 and 2000 levels so students can take prerequisites for the advanced courses.

- AAEC 3014 Analytic Methods in Applied Economics
- AAEC 3024 Monetary & Global Issues in App. Econ.
- AAEC 3304 Rural and Regional Development Policy
- AAEC 3314 Environmental Law (Area 7)
- AAEC 3454 Small Business Man. & Ent.
- AAEC 4304 Environ. and Sustainable Devel. Econ.
- AAEC 4314 Environ. Econ. Analysis & Management
- AAEC 4344 Sustainable Development Economics
- AAEC 4804 (STAT 4804) Elementary Econometrics
- ACIS 2115 or 2004 Accounting
- ACIS 4344 Tax for Financial Planners
- AHRM 2675 Intro. to Residential Property Man.
- AHRM 3604 Housing and the Consumer
- AHRM 3634 Man. Afford. & Specialized Housing
- AHRM 4604 Housing, Energy & the Env. (Area 7)
- AHRM 4644 Adv. Residential Property Management
- AHRM 4664 Universal Design
- AHRM 4674 Man. & Market. Housing for Later Life
- BC 1214 Introduction to Building Construction I (Summer only)



- BC 1224 Introduction to Building Construction II (Summer only)
- BSE 2384 Soil and Water Resources Management
- CEE 4254 Municipal Engineering
- CEE 4264 Sustainable Land Development
- CSES 3134 (ENSC 3134) Soils in the Landscape
- ENSC 3604 Fundamentals of Environmental Science
- CSES 3634 (ENSC 3634) Physics of Pollution
- FIN 3055 Legal Environment of Business
- FIN 3134 Finance Concepts and Skills
- FREC 2554 Nature and American Values (Area 2)
- GEOG 1004 Human Geog. & Sustainability (Area 3)
- GEOG 2314 Maps and Mapping
- GEOG 3104 Env., Problems, Pop. & Devel. (Area 7)
- GEOG 4084 Intro. to Geographic Info. Systems
- HORT 2134 Plants/Green Space in Urban Com. (Area 3)
- HORT 3544 Landscape Construction
- MGT 3304 Man. Theory and Leadership Practice
- MGT 4324 (PHIL 4324) Business and Prof. Ethics
- MKTG 4554 Rel. Between Buyers & Sellers
- NR 4014 (ECON 4104) Natural Resource Economics
- PSCI 3424 State and Local Government
- PSCI 3434 Urban Politics
- REAL 3954 Study Abroad (1-3 credits)
- REAL 4964 Internship (1-3 credits)
- REAL 4974 Independent Study (1-3 credits)
- REAL 4984 Special Study (1-3 credits)
- REAL 4994 Undergraduate Research (1-3 credits)
- STAT 2004 Introductory Statistics (Area 5)
- STAT 3005 Statistical Methods (Area 5)
- STAT 3006 Statistical Methods
- STAT 3604 Statistics for the Social Sciences (Area 5)
- UAP 2014 Urbanization and Development (Area 3)
- UAP 4374 Land Use and Environ.: Plan. & Policy
- UAP 4754 Legal Foundations of Planning
- SBIO 3004 Sustainable Nature-based Enterprises
- SBIO 3324 Green Building Systems

Students will be strongly encouraged to double major in an existing major on campus and Real Estate. Students who choose to double major in an existing degree and Real Estate will have the required courses from their major serve as their real-estate competency and the restricted electives will be waived. For example, a student who chooses to major in Civil and Environmental Engineering (CEE) and Real Estate will have the required engineering courses from their CEE degree satisfy their restricted-elective requirement for their Real Estate degree.

## Admission Requirements

Students will be admitted to the program from the general applicant pool of Virginia Tech, or will transfer to the program from other majors at Virginia Tech or from outside of Virginia Tech. No special admissions for this program are required. Admission to Virginia Tech requires that students entering as freshmen meet the following academic requirements:

- 18 units of high-school course work
- 4 units of English
- 3 units of math (includes algebra I, geometry and algebra II)
- 2 units of laboratory science (chosen biology, chemistry or physics)
- 2 units of social science (one must be history)
- 3 additional academic units (foreign language is highly recommended)
- 4 elective units
- Mid -50% GP of 3.81-4.24
- Mid -50% SAT of 1160-1340

## Faculty

Faculty for this program will be a combination of existing faculty, new hires and industry professionals. The existing faculty has well over 200 years of combined academic experience teaching courses and conducting research related to real estate, and several of the faculty members have industry experience. Industry professionals will be retained as Professors of Practice or Adjunct Professors who might work full or part time-time to participate in the offering of REAL courses.

The core faculty that will teach required courses and advise students includes:

- 1.375 FTE – College of Agriculture and Life Sciences,
- 1.0 FTE – College of Architecture,
- 0.875 FTE – Pamplin College of Business,
- 0.625 FTE – College of Engineering,
- 1.875 FTE – College of Liberal Arts and Human Sciences,
- 0.125 FTE – College of Natural Resources and Environment, and
- 3.0 FTE – Professors of Practice.

With Professors of Practice are industry professionals with sufficient academic preparation and/or industry experience to participate in the offering of REAL courses and advising students. These industry professionals may participate on a part-time or fulltime basis, and may be compensated or volunteer their time.

The total is 8.875 FTE. With an anticipated enrollment of 150 majors the ratio of students to faculty will be 19.9 (=150/8.875).

The degree program will be coordinated by a Director and Associate Director, who are currently Professors on the faculty at Virginia Tech. These individuals will coordinate the academic program, advise students and teach classes. The Director will focus on coordination with industry and the participating colleges on administrative matters. The Associate Director will coordinate academic offerings and advising. These coordinating activities are crucial to the successful offering of the integrated, interdisciplinary academic program and effectively incorporating industry participation in the program.

The Director and Associate Director will report to a the Dean of the College of Architecture will Chair a Committee of Deans from the six participating Colleges (College of Agriculture and Life Science, College of Architecture and Urban Studies, Pamplin College of Business, College of Engineering, College of Liberal Arts and Human Sciences, and College of Natural Resources and Environment).

### Learning Outcomes

The novel aspect of teaching pedagogy related to the B.S. in Real Estate is that graduates will understand and can apply knowledge from multiple disciplines and are prepared to combine knowledge-based skills gained from these multiple disciplines in professional practice.

- Understand core academic content from multiple disciplines including finance, economics, building construction, environmental engineering, property management and public policy and how they interact in the formation of successful real estate projects.
- Understand how to incorporate economic, environmental and social considerations into the practice of real estate.
- Exhibit competence in finance, economics, building construction, environmental engineering, property management, public policy, or another real estate area of academic concentration.
- Evaluate real estate projects in terms of risk, acquisition, development, financing, construction, sales, and management.
- Apply knowledge from the multiple disciplines in analyzing the feasibility of real estate projects.
- Develop creative solutions to challenging market, social and environmental issues facing social acceptance and sustainability of real estate projects.
- Demonstrate the ability to work as part of an interdisciplinary team, employing roles as leaders, followers, collaborators and experts.
- Apply effective communication skills, and practice professional and ethical behavior.
- Continue professional development, which may include professional licensure, graduate level education, continuing education courses, self-directed study, and professional, civic, and community engagement.

Learning outcomes will be evaluated through exams, presentations and group projects. The faculty will collaborate in the development and refinement of direct measures of achievement and rubrics for expectations of student success. The faculty will meet at the end of each academic year over the first five years to evaluate progress towards meeting learning outcomes as the program is implemented and evaluate the need for revisions and improvements in teaching

pedagogy and expectations of student achievement. After the initial five year years, the faculty will review the curriculum and student performance on a biannual basis.

The goal of the learning outcomes assessment will be to refine the academic program so graduates will be prepared to lead complex real estate projects that require consultation with people who have specific professional expertise in planning, developing or managing a developed project, integrate their broad knowledge and the profession-specific expertise into a successful team that meets project goals.

The Real Estate Program will draw on faculty expertise from six colleges (College of Architecture and Urban Studies, College of Agriculture and Life Sciences, Pamplin College of Business, College of Engineering, College of Liberal Arts and Human Sciences, and College of Natural Resources and Environment). These are the colleges that will contribute faculty to teach the required real estate courses. A Real Estate Faculty Committee will be composed of one official representative from each of the six participating colleges and faculty who teach Real Estate requirements (see list above), and learning outcomes assessments will be carried out by this committee.

### Program Assessment

The Real Estate Program will be physically located in the Bishop-Favro Hall. Reporting of program evaluation will be to a committee of Deans from the six participating colleges with the Dean of the College of Architecture and Urban Studies serving as the lead Dean. Program assessment will be carried out by the Real Estate Faculty Committee described in the preceding section, and assessment outcomes will be reported to the Deans through the Dean of the College of Architecture and Urban Studies.

Existing courses will be evaluated by procedures in place within the academic departments offering these courses. REAL courses and overall program evaluation will be carried out by the Real Estate Faculty Committee described in the preceding section.

- Each REAL course will participate in the Virginia Tech SPOT course evaluations at the end of each semester.
- Senior exit interviews will be conducted to evaluate learning outcomes identified in the section immediately above. A formal set of closed-ended and open-ended questions will be developed by the Real Estate Faculty Committee to ask each graduating senior.
- The faculty will also use the results from the VT Senior Survey, which will allow comparisons with academic programs across the six participating colleges and the university as a whole. A subset of parallel questions will be posed in the in-person exit interviews and the anonymous Senior Survey to compare results.
- Surveys of graduates and employers will be conducted every two years (commencing three years after the first graduating class) to evaluate the learning outcomes immediately above in a post-graduation context.

The real estate program will be evaluated in 2015, after the first graduating class (internal transfers and double majors), and at 5-year intervals thereafter.

## Benchmarks of Success

The B.S. in Real Estate degree program will be considered a success if:

- Enrollment of majors and double majors reaches 150 students by the fifth year after the first class is admitted.
- 70% or more of majors graduate in 4 years or less.
- Program retention rate is at least 75%.
- 75% of graduates obtain employment in the real estate industry or pursue graduate studies within one year of graduation.
- 75% of alumni are satisfied or very satisfied with the academic experiences.
- 75% of employers are satisfied with graduates' job performance after 3 years of employment

## Expansion of an Existing Program

There is not an undergraduate degree program in real estate on campus. However, four colleges (Agriculture and Life Sciences, Architecture, Business, and Liberal Arts and Human Sciences) participate in the offering of a Real Estate minor.

Additionally, the Department of Apparel, Housing, and Resource Management offers a B.S. degree in Apparel, Housing, and Resource Management with a Residential Property Management option.

The Department of Building Construction offers an option in Development, Real Estate, and Construction. This option requires students to take the Real Estate minor noted above.

The Department of Civil and Environmental Engineering hosts the Land Development Design Initiative where students can take a focused set of courses to develop expertise in land development.

The B.S. in Real Estate is designed to build on these strengths, using existing courses from these programs, and enhancing offerings through the newly created REAL Courses describe above. To accommodate real estate majors class sizes may be expanded or new course sections will be added as needed.

## Collaboration or Stand Alone Program

The Bachelor of Science in Real Estate will be a standalone program. As an interdisciplinary academic program that transcends college boundaries in terms of course offerings and student advising the program will require close collaborations with a number of academic programs on campus. This collaboration will be facilitated by the Real Estate Faculty Committee described above and the committee of six deans – College of Agriculture and Life Science, College of Architecture and Urban Studies, College of Engineering, College of Liberal Arts and Human

Sciences, Pamplin College of Business, and College of Natural Resources and Environment. The Real Estate Program will embrace an operational motto of:

**“one degree supported by six colleges”.**

## **II. Justification for the Proposed Degree Program**

### Response to Current and Future Societal Needs

To address that challenges faced by the real estate industry from diminished public confidence the projected 42% growth in the U.S. population by 2050 graduates need integrated, interdisciplinary academic preparation. A recent survey of estate programs by Weinstein and Worzalla (2008) (see also Galuppo & Worzalla, 2004) found the important skills that real estate graduates should possess are:

- Decision making, including financial and quantitative analysis.
- Ability and experience to evaluate risk in real estate deals.
- Ability to become a socially responsible and ethical leader.
- Negotiation.
- Oral and written interpersonal communication.
- Work in teams.
- Effective leadership.
- Use of technology.
- Respond to change and engage in lifelong learning.

In the June 2011 issue of Commercial Property Executive, Paul Rosta writes that real-estate executives “*would like to see expanded training in development*” and notes that “*schools are adding multidisciplinary programs.*” Thus, the academic preparation required of successful graduates goes beyond the above list. A successful leader in the real estate industry needs to have a firm understanding of site selection and permitting, project financing, design and construction, marketing and sales, property management.

These sets of diverse knowledge and skills are the fundamental reasons why an integrated, interdisciplinary program in real estate is needed. Dechaine (2011) states that “*... real estate-related courses ... can prepare students for one of the widest career selections in the business world today. Residential and commercial real estate brokerage, property management, land development, mortgage banking, urban planning, real estate counseling, appraisal and research are all aspects of a career in real estate. In today’s extremely competitive job market, a specialized degree in (real estate) and some hands-on experience can provide an edge for recent graduates.*” The specialized degree we are proposing here will provide students with core knowledge in subject areas such as business, engineering (design and construction), and the environmental and social sciences. The new real estate courses designed for this program, which is largely unique in the world, will provide the integrative training to help students assimilate the complementarities of the diverse disciplines in a successful real estate team and project.

The B.S. in Real Estate will position graduates to meet important, emerging demands the industry faces over the next 20 to 40 years. Graduates will be leaders in the industry who are prepared to restore and maintain public confidence in their industry and to implement practices that address social and environmental goals to provide a sustainable built environment that will accommodate the substantial projected growth in the U.S. population.

### Employment Demand

Grinis (2011) states that “*the recession, financial crisis, pullback in the credit markets, and high-profile fraud cases, such as the Bernie Madoff scandal, took a toll on real estate private equity over the past few years, causing the market to shrink to about a third of its 2007 peak based on total capital commitments. There are now signs the sector is reaching the bottom, and fund managers should brace themselves for an acceleration of deals and financing activity to hit the sector over the next several years.*” Confirming this projection, Lee (2008) reports that real estate market recovery and growth will begin in 2013. The economic recovery will increase the demand for real estate professionals by the time of the first graduating class, which will be in 2016. Furthermore, taking a long term perspective the 40+% growth in U.S. population and replacing about half of the current built environment over the next 20 to 40 years is going to create job growth in all areas of the real estate industry.

Projecting growth in real estate jobs is difficult for several reasons. The real estate profession, as a whole, is much larger than the residential real estate sales and leasing agents that so many people are familiar with. Land and the structures built on the land provide living, work and recreation spaces for people. Thus, people involved in real estate can be found jobs throughout the private, public and nonprofit sectors. Many jobs for real estate professionals fall under that industry sectors where the employment occurs and not under a real estate heading. For example, real estate finance is an important area where real estate professionals are hired by banks, investment trusts, regulatory agencies, etc. Civil and construction engineers are involved in all aspect of the real estate industry. In addition, projected job growth does not reveal areas where a dual degree in real and an established discipline would enhance job prospects and career success. Below we present job growth prospects for some of these overlapping professional categories.

Tables 1 and 2 show a number of professions that would hire a graduate with a BS in Real Estate and where dual degrees in real estate and another field would improve job opportunities. Growth in these professions is projected to increase by about 5 to 30 percent in the U.S. over the period 2008 through 2013 (Table 1). The range of increase is comparable within Virginia (Table 2).

<b>Occupation</b>	<b>Employment (in thousands)</b>		<b>Employment Change, 2008-2018</b>		<b>Job openings due to growth and replacement needs, 2008-2018 (in thousands)</b>
	<b>2008</b>	<b>2018</b>	<b>Number (in thousands)</b>	<b>Percent</b>	
* Appraisers and assessors of real estate	92.4	96.6	4.2	4.6	21.0
** Architects	141.2	164.2	22.9	16.2	46.8
** Civil engineers	278.4	345.9	67.6	24.3	114.6
** Construction managers	551.0	645.8	94.8	17.2	137.7
Cost estimators	217.8	272.9	55.2	25.3	103.6
** Economists	14.6	15.5	0.9	5.8	5.0
** Environmental engineers	54.3	70.9	16.6	30.6	27.9
Property, real estate, and community association managers	304.1	329.7	25.6	8.4	78.0
** Loan officers	327.8	360.9	33.0	10.1	68.8
** Financial managers	539.3	580.5	41.2	7.7	138.2
** Financial analysts	250.6	300.3	49.6	19.8	95.2
** Market research analysts	249.8	319.9	70.1	28.1	137.3
* Real estate sales agents	394.4	458.2	63.7	16.2	128.3
* Real estate brokers	123.4	134.0	10.6	8.6	30.8
Residential advisors	56.9	62.0	5.2	9.1	25.3

Source: <http://data.bls.gov/oep/noeted> (requires search by occupation titles).

\* Professions where education expectations are being increased to include academic training.

\*\* Professions where a dual degree with real estate would be beneficial for entry and advancement in the real estate industry



**Table 2. Virginia Employment Projections**

Occupation	Employment (in thousands)		Employment Change, 2008-2018	
	2008	2018	Number (in thousands)	Percent
* Appraisers and assessors of real estate	3,210	3,340	130	4.0
** Architects	4,051	4,695	644	15.9
** Civil engineers	10,466	13,265	2,799	26.7
** Construction managers	17,149	19,932	2,783	16.2
Cost estimators	7,547	9,521	1,974	26.2
** Economists	471	545	74	15.7
** Environmental engineers	2,247	2,781	534	23.8
Property, real estate, and community association managers	3,774	3,992	218	5.8
** Loan officers	9617	10543	926	9.6
** Financial managers	12,482	13,928	1,446	11.6
** Financial analysts	8,047	10,662	2,615	32.5
** Market research analysts	8,961	12,003	1,042	33.9
* Real estate sales agents	26,284	29,954	3,670	14.0
* Real estate brokers	2,746	2,890	144	5.2

Source:

[http://www.vawc.virginia.gov/analyzer/searchanalyzer2.asp?cat=HST\\_EMP\\_WAGE\\_OCC&session=OC\\_CPROJ&subsession=99&step=3](http://www.vawc.virginia.gov/analyzer/searchanalyzer2.asp?cat=HST_EMP_WAGE_OCC&session=OC_CPROJ&subsession=99&step=3) (requires search by occupation titles).

\* Professions where education expectations are being increased to include academic training.

\*\* Professions where a dual degree with real estate would be beneficial for entry and advancement in the real estate industry

In addition to statistics produce by the federal government that addresses general job categories where graduates of the Bachelor of Science in real Estate might find employment, CEL & Associates, Inc. (<http://celassociates.com/>) provides employment projections for a fee to companies who hire real estate professionals. They have shared some of their employment data with Virginia Tech for use in the development of this proposal.

For companies who own and manage multifamily housing complexes there has been continuing turnover at a variety of executive and management positions that will create job opportunities for graduates (Table 3). For on-site managers and regional executives the annual turnover rates indicate that job opportunities have been available nationally. The annual turnover rate for on-site managers has been about 20% for the past decade. The annual turnover rate for regional executives has declined from about 11% in 2000 to about 7% in 2010 and appears to be increasing. Job opportunities also exist in senior executive positions as graduate’s progress through the corporate ranks.

**Table 3. Employment Turnover in Multifamily Housing Ownership and Management Companies**

<b>Employee Turnover Rate</b>	<b>Overall Rate</b>	<b>Senior Executive</b>	<b>Regional Executive</b>	<b>On-Site Manager</b>	<b>On-Site Leasing</b>	<b>On-Site Maintenance</b>
2000 Average	40.3%	8.4%	10.8%	22.0%	35.5%	44.2%
2001 Average	38.3%	7.8%	9.7%	19.6%	31.6%	41.5%
2002 Average	37.0%	7.4%	10.4%	20.3%	32.5%	41.0%
2003 Average	33.1%	5.5%	8.6%	18.5%	27.6%	37.9%
2004 Average	31.8%	5.2%	9.0%	19.7%	28.9%	38.6%
2005 Average	32.1%	5.2%	9.1%	20.2%	30.3%	38.4%
2006 Average	30.2%	4.4%	8.3%	19.1%	30.8%	37.5%
2007 Average	30.4%	4.1%	8.2%	20.4%	29.3%	35.5%
2008 Average	33.4%	5.2%	8.9%	21.9%	32.4%	37.5%
2009 Average	36.5%	5.8%	8.9%	22.1%	32.8%	38.6%
2010 Average	28.6%	4.1%	6.7%	18.3%	27.8%	33.5%
2011 Average	30.0%	4.7%	7.1%	20.1%	29.9%	35.2%
2012 Average*	31.3%	4.6%	7.6%	20.7%	30.2%	35.8%

\* Projected.  
Source: CEL & Associates, Inc.

Compensation for employees in the real estate industry has been strong with merit increases historically out pacing inflation and being comparable to the inflation rate in recent years (Table 4). The data in table 4 shows that merit compensation in the real estate industry has not only outpaced inflation, but also growth in the U.S. gross domestic product (GDP), which indicates that graduates have strong earning potential.

**Table 4. Compensation Trends in the Real Estate Industry**

Year	Metric	Merit Increases				Other Budget / Planning Trends				
		Senior Management	Exempt Employees	Non-Exempt Employees	Overall Company	General Inflation Rate	Incentive Compensation - Bonus Realization	U.S. GDP Growth	Total Medical \$ Growth	Employee Share of Healthcare Costs
						(a)				
2001	Average	5.8%	4.9%	4.2%	5.2%	2.8%	92.0%	1.1%		
2002	Average	4.0%	3.8%	3.5%	4.0%	1.6%	86.0%	1.8%		
2003	Average	3.7%	3.6%	3.4%	3.8%	2.3%	80.0%	2.5%		
2004	Average	3.9%	3.5%	3.2%	3.7%	2.7%	83.4%	3.6%		
2005	Average	4.1%	3.5%	3.2%	3.7%	3.4%	87.0%	3.1%		5.6%
2006	Average	4.2%	3.7%	3.3%	3.9%	3.2%	87.8%	2.7%	8.5%	5.4%
2007	Average	4.7%	3.9%	3.7%	4.2%	2.9%	83.4%	2.1%	8.5%	12.8%
2008	Average	3.3%	3.5%	3.5%	3.6%	3.9%	73.1%	0.3%	7.6%	10.1%
2009	Average	1.4%	2.0%	2.1%	2.0%	-0.3%	64.4%	-3.1%	7.5%	14.7%
2010	Average	2.2%	1.9%	1.9%	2.0%	1.6%	67.3%	2.4%	7.8%	8.0%
	75th Percentile	3.5%	3.3%	3.1%	3.5%					
2011 (1)	Average	3.0%	2.6%	2.7%	2.8%	3.2%	73.5%	1.8%	7.7%	9.3%
	75th Percentile	3.8%	3.4%	3.3%	3.6%					
<b>2012 (2)</b>	Average	<b>3.5%</b>	<b>3.1%</b>	<b>3.4%</b>	<b>3.4%</b>	<b>3.4%</b>	<b>81.2%</b>	<b>2.1%</b>	<b>6.9%</b>	<b>8.2%</b>
	75th Percentile	<b>4.4%</b>	<b>3.8%</b>	<b>4.0%</b>	<b>4.2%</b>					
<b>2013 (3)</b>	Average	<b>3.5%</b>	<b>3.0%</b>	<b>3.2%</b>	<b>3.3%</b>	<b>3.7%</b>	<b>85.8%</b>	<b>1.9%</b>	<b>8.5%</b>	<b>9.5%</b>

(1) Final results for 2011 as reported in CEL 2012 National Compensation Survey.

(2) 2012 figures based on CEL 2012 National Compensation Survey (2Q/3Q 2012).

(3) Forecast for 2013 incorporates early feedback on assumptions for budgeting.

(a) From U.S. Bureau of Labor Statistics.

(b) Historic and 1Q/2Q 2102 figures - from U.S. Bureau of Economic Analysis (BEA). Projections for 2012 and 2013 are an average of several sources.

(c) Annual total medical cost growth (Family of 4 with employer PPO Plan).

(d) Growth in employee payroll share of medical cost. Medical cost trends (Notes (c) and (d)) from Milliman Medical Index 2012, and related projection expectations.

Source: CEL & Associates, Inc./CEL Compensation Advisors, LLC.

Looking to the future, real estate executives are an aging professional cohort. By 2015, in just three years, CEL & Associates project that there will be a national shortage of 15,000 to 25,000 senior leaders in the industry. This means that there are excellent opportunities for upward professional mobility by graduates. Turn-over rates by executive category are shown in Table 5.

**Table 5. Real Estate Executives Expected to Retire by 2020**

<b>Title / Level</b>	<b>% Expected To Retire*</b>
President / CEO	58% – 62%
Chief Financial Officer	43% – 48%
Executive Vice President	46% – 51%
Senior Vice President	42% – 45%
Vice President	39 % - 43%

\*Includes resignation, retirement, permanent disability and death.

Source: CEL & Associates, Inc.

### Student Demand

Virginia Tech has had strong enrollment in a Real Estate minor. Enrollment peaked in 2007, declined with the slump in the real-estate markets and national economy, but has recovered to nearly the 2007 level (Table 6). It is expected that a large number of students who would minor in Real Estate will choose to do a double major in their current major and real estate.

<b>Table 6. Historical Enrollment in the Virginia Tech Real Estate Minor</b>	
<b>Year</b>	<b>Enrollment</b>
2007	181
2008	163
2009	168
2010	134
2011	179

There is a Sustainable Land Development Club, which is a student organization supported by the Land Development Design program. There are currently 70 student members.

*Add testimonials of students who want to major.*

*SCHEV requires a survey of potential majors that is administered immediately prior to submission. This survey will be administered to students in the Real Estate minor and undecided students after BOV approval and before submission to SCHEV. Key questions:*

- Interest in the major
- Demographics (e.g., major and year)

Survey should not be administered to graduating seniors (i.e., not what would you have majored in).

Projected Enrollment

Year 1		Year 2		Year 3		Year 4 Target Year (2-year institutions)			Year 5 Target Year (4-year institutions)		
2013-2014		2014-2015		2015-2016		2016-2017			2017-2018		
HDCT	FTES	HDCT	FTES	HDCT	FTES	HDCT	FTES	GRAD	HDCT	FTES	GRAD
25	25	50	50	75	75	100	100		150	150	50

Retention (75%)

Part-time students (0%)

Full-time students (100%)

Expected time to graduation in years for full-time students (4)

Number of credit hours per semester for full-time students (15)

Duplication

Virginia Tech will be the first university in the nation to integrate disciplines within six colleges to provide the disciplinary training and real estate knowledge in an undergraduate program. The only comparable program is the Cornell University graduate *Program in Real Estate* that is supported by seven colleges.

There one existing undergraduate real estate programs in the Commonwealth.

Virginia Commonwealth University offers a Bachelor of Science in Real Estate ([http://www.pubapps.vcu.edu/bulletins/prog\\_search/?did=20606](http://www.pubapps.vcu.edu/bulletins/prog_search/?did=20606)) and Post-baccalaureate undergraduate ([http://www.pubapps.vcu.edu/bulletins/prog\\_search/?did=20410](http://www.pubapps.vcu.edu/bulletins/prog_search/?did=20410)) and graduate ([http://www.pubapps.vcu.edu/bulletins/prog\\_search/?did=20181](http://www.pubapps.vcu.edu/bulletins/prog_search/?did=20181)) certificates in Real Estate and Urban Land Development. Enrollment in the BS program is documented in Table 8. Virginia Commonwealth University offers a traditional bachelor degree in real estate located in a Department of Finance, Insurance and Real Estate within their School of Business. Students take courses in Principles of Real Estate as well as real estate law, appraisal, finance and investment, and the other courses comprise a traditional finance curriculum.

	Graduates		Enrolled
	2009/10	2010/11	2011/12
Virginia Commonwealth University, BS Real Estate	29	15	15

Old Dominion offers a Real Estate track within its Finance Department in the College of Business and Public Administration. There were 6 students (Table 7) enrolled in this program in the Fall 2011 semester. This is a traditional finance-oriented real estate program where students take Principles of Real Estate, Real Estate Finance, Appraisal and Investments, and the other courses comprise a traditional finance curriculum ([http://uc.odu.edu/advising/docs/curriculumsheets/2010\\_2011/bu-finrealestate.pdf](http://uc.odu.edu/advising/docs/curriculumsheets/2010_2011/bu-finrealestate.pdf)).

The Virginia Tech Bachelor of Real Estate will not be duplicative of the Virginia Commonwealth University BS degree or the Old Dominion track because students will earn an interdisciplinary real estate degree that includes offerings from six colleges and will take six unique real estate courses that are designed to integrate students' disciplinary education. No other university in Virginia had the breadth and depth of academic programs to present the interdisciplinary B.S. in Real Estate degree Virginia Tech will offer. There are very few universities in the U.S. that are capable of offering a similar program. It is expected that this program will draw national attention and recruit students from Virginia, the mid-Atlantic region, the eastern U.S., nationally and internationally.

### III. Projected Resource Needs for the Degree

#### Full Time Faculty

The B.S. in Real Estate will be led by a Director and an Associate Director. The Director and Associate Director will both participate in actively teaching courses and advising students. The Director will work with developing relationships with the participating colleges and industry groups, and staffing courses. The Associate Director will work with relationships with participating departments, curriculum development and will lead student advising.

As identified above, the program will have 8.875 FTE of faculty. This will include 5.875 academic faculty that includes the Director and Associate Director plus 3 FTE of industry professionals who will hold the title of Professors of practice. All faculty will teach courses in the their home departments that support the Real Estate major and/or teach Real Estate (REAL) classes.

#### Part-time Faculty

NA

#### Adjunct Faculty

NA

## Graduate Assistants

NA

## Classified Positions

One support staff person will be hired to assist with program promotion, managing the academic program, and maintaining student records.

## Space

Two offices will be required plus space for studio classes (REAL 3024 and 4075-76). The offices will be for the Director and the Professional Support person, which will be located in Bishop-Favro Hall where existing classrooms can be used studio classes.

The classroom space should have space for a minimum of seven teams of four students with two students at each computer work station, for a total of fourteen (14) computer work stations, plus one (1) workstation for the instructor.

## Library

Virginia Tech's library subscribes, either electronically or in hard copy, to the top ten interdisciplinary real estate journals: *Journal of Real Estate and Economics*, *Real Estate Economics*, *Journal of Real Estate Research*, *Journal of Urban Economics*, *Land Economics*, *Journal of Housing Economics*, *Journal of Real Estate Portfolio Management*, *Appraisal Journal*, and *Journal of Housing Research and Journal of Real Estate Literature*. It is important that these subscriptions be maintained, but electronic subscriptions are adequate and perhaps preferred.

Items needed, in order of priority:

1. Access to SNL Financial REIT platform (\$7500/year for University wide access).
2. Access to the ULI case studies data-base (Member Price Site License (\$597 for 5 users at a time)

## Equipment (including computers)

With the REAL 3024 and REAL 4075-76 class section sizes set at 28 students, the ideal working situation is seven teams of four students; each team will have two pairs of two students working on a computer (14 total computers). The ideal workspace should be one five foot wide by 2.5 ft deep table to hold a large screen (24") monitor along with room for large plan sets and student textbooks and laptops. The computers should have a current configuration of Windows 7 operating system running on 4 GB RAM, with a 500 GB hard disk. The lab should have one networked printer capable of printing 8'x11.5" as well as 11"x17" size paper. Provisions for cost-sharing an existing plotter with another academic unit should be made.

The Classroom should be outfitted with an instructional podium, projector, and screen for effective computer-based teaching. Software licensing expenses will be required for Microsoft Office, Graphics, and other software.

Telecommunications

NA

Other Resources

NA

General Budget and Estimated Resources

See tables below.



#### **IV. Certification Statements**

##### **Part A: Answer the following questions about general budget information**

- Has or will the institution submit an addendum budget request to cover one-time costs?  
Yes\_\_\_\_\_ No\_\_X\_\_
  
- Has or will the institution submit an addendum budget request to cover operating costs?  
Yes\_\_\_\_\_ No\_\_X\_\_
  
- Will there be any operating budget requests for this program that would exceed normal operating budget guidelines (for example, unusual faculty mix, faculty salaries, or resources)?  
Yes\_\_\_\_\_ No\_\_X\_\_
  
- Will each type of space for the proposed program be within projected guidelines?  
Yes\_\_X\_\_ No\_\_\_\_\_
  
- Will a capital outlay request in support of this program be forthcoming?  
Yes\_\_\_\_\_ No\_\_X\_\_

**Part B: Fill in the number of FTE positions needed for the program**

	Program Initiation Year 2013- 2014		Expected by Target Enrollment Year 2017- 2018	
	On-going and reallocated	Added (New)	Added (New)**	Total FTE positions
Full-time faculty*	1.25		4.625	5.875
Part-time faculty (faculty FTE split with other unit(s))				0.00
Adjunct faculty			3.00	3.00
Graduate assistants				0.00
Classified positions		1.00		1.00
<b>TOTAL</b>	1.25	1.00	7.625	9.875
* Faculty dedicated to the program ** Added <b>after</b> initiation year				

**Part C: Estimated resources to initiate and operate the program**

	<b>Program Initiation Year 2013- 2014</b>		<b>Expected by Target Enrollment Year 2017- 2018</b>	
Full-time faculty	2.88	0.00	1.00	3.88
salaries	\$366,902		\$105,763	\$472,665
fringe benefits	\$106,402		\$30,671	\$137,073
Part-time faculty (faculty FTE split with unit(s))	0.00	0.00	0.00	0.00
salaries				
fringe benefits				
Adjunct faculty	0.00	0.00	3.00	3.00
salaries			\$240,000	\$240,000
fringe benefits			\$48,000	\$48,000
Graduate assistants	0.00	0.00	0.00	0.00
salaries				\$0
fringe benefits				\$0
Classified Positions	0.00	1.00	0.00	1.00
salaries		\$40,000		\$40,000
fringe benefits		\$11,500		\$11,500
<b>Personnel cost</b>				
salaries	\$366,902	\$40,000	\$345,763	\$752,665
fringe benefits	\$106,402	\$11,500	\$78,671	\$196,573
Total personnel cost	\$473,304	\$51,500	\$424,434	\$949,238
Equipment	\$4,500			\$4,500
Library	\$10,000			\$10,000
Telecommunication costs				\$0
Other costs (specify)	\$35,000			\$35,000
<b>TOTAL</b>	<b>\$522,804</b>	<b>\$51,500</b>	<b>\$424,434</b>	<b>\$998,738</b>

**Part D: Certification Statement(s)**

The institution will require additional state funding to initiate and sustain this program.

Yes \_\_\_\_\_

Signature of Chief Academic Officer

No \_\_\_\_\_

Signature of Chief Academic Officer

**If “no,” please complete Items 1, 2, and 3 below.**

**1. Estimated \$\$ and funding source to initiate and operate the program.**

<b>Funding Source</b>	<b>Program initiation year 2013-2014</b>	<b>Target enrollment year 2017-2018</b>
Reallocation within the department ( <i>Note below the impact this will have within the department.</i> )	\$487,804	
Reallocation within the school or college ( <i>Note below the impact this will have within the school or college.</i> )	\$86,500	
Reallocation within the institution ( <i>Note below the impact this will have within the institution.</i> )		\$498,738
Other funding sources ( <i>Specify and note if these are currently available or anticipated.</i> )	\$0	\$500,000

**2. Statement of Impact/Funding Source(s).**

In the initial year of the program the teaching resources will come from existing academic units; most courses are currently offered in the curriculum. The College of Architecture and Urban Studies will allocate operating dollars and funds for a staff person.

The goal for the fully functioning program is to raise an endowment of \$10 million, which is expected to return \$500,000 per year to operate the program. The remaining \$498,738 will come

from the Provost office and will include the funds that follow the instructor of record for courses taken by Real Estate majors.

**3. Secondary Certification.**

If resources are reallocated from another unit to support this proposal, the institution will **not** subsequently request additional state funding to restore those resources for their original purpose.

Agree \_\_\_\_\_

Signature of Chief Academic Officer

Disagree \_\_\_\_\_

Signature of Chief Academic Officer

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