Tomorrow's Citizens,
Tomorrow's Leaders

Preamble

Virginia Tech aims to inspire minds, grow intellectual capacities, kindle creativity, deepen knowledge and engagement, expand civic and intercultural understanding, and encourage a commitment to personal and social responsibility. Virginia Tech equips students with the knowledge, intellectual agility, practical competency, and ethical foundation to thrive as citizens in a rapidly changing economic, political, and social climate. Virginia Tech develops innovative curricula that broadens and deepens students' knowledge through the study of the arts, classical studies, engineering, humanities, languages, natural sciences, and the social sciences. Through the creative use of technology and learner-centered pedagogy, Virginia Tech helps students grow and increase their capacity for reasoning and analysis; rational and aesthetic judgment; oral and written communication and expression; as well as the insight of creative and constructive "problem-creating" and "problem-solving."

Key Ideas

Promote experiential learning opportunities within and outside the classroom; increase opportunities for students to engage in scholarship, research and outreach; reformulate the Curriculum for Liberal Education to better develop in students the creativity and complex reasoning skills necessary to address the "grand challenges" of the coming decades; augment the pedagogy focused on teaching with a pedagogy of learning.

KEY IDEA #1: *Redevelop the Curriculum for Liberal Education (CLE)*

Rationale:

The CLE is designed "to foster and develop intellectual curiosity and reasoning; strong analytic, communication, quantitative, and information literacy competencies; the capacity for collaboration and creative problem-solving; the ability to synthesize and transfer knowledge; intercultural knowledge and understanding; and ethical reasoning and action."

For many students, the CLE experience does not fully realize these aspirations. The CLE provides a unique opportunity to enhance experiential learning and engage and empower students to be active, creative, knowledgeable, and ethical participants in a globally-networked society. The CLE should be redesigned to provide individualized student learning opportunities that emphasize the acquisition of writing, quantitative and qualitative reasoning, the ability and imagination of problem identification, holistic thinking, and oral communication competencies. Through purposeful integration and collaboration among departments, the revised CLE will create connections across disciplines – offering students the opportunity for both mastery within their discipline and a broad, interconnected set of competencies across disciplines – providing them with the capacity to tackle the "grand challenges" of the coming decades.

Potential Obstacles:

- Budget/Human Resource feasibility for restructuring of CLE
- Fostering collaboration between/across disciplines and departments
- Redevelopment of CLE syllabi and course load structure
- The creation of course offerings specific to interdisciplinary areas of study
- Buy-in from faculty on redesigned curriculum
- Overcoming the pressure on the university to act as a trade school providing just those skills necessary for employment in a predetermined field
- Acknowledging the difference between liberal education and general education
- Demand a deeper knowledge of the arts, classical studies, philosophy, history, literature, and languages from each graduating student

Unresolved Issues:

- How might an interdisciplinary approach impact offering, for example, classical studies or philosophy?
- How does this approach impact disciplinary knowledge and what it takes to be good at one or the other discipline?
- How to incorporate meaningful experiential learning opportunities into the CLE
- Determining which areas can be fulfilled with previous high school/transfer credits
- Determining credit requirements for each area
- Can we demonstrate how a good CLE does in fact make a student more employable across a wide range of professions?

Strategic Contribution:

Tomorrow's citizens and leaders are not created overnight rather are grown and nurtured over time and with great effort. A core curriculum that allows students the opportunity to explore possibilities and make intelligent connections is key. An effective CLE will provide students with competencies over skills and the university, the Commonwealth and the world will benefit from these curious seekers and creators of knowledge. The CLE will be judged successful not today or tomorrow but years down the road if it shapes learners who "problem create" and "problem solve".

KEY IDEA #2: *Afford undergraduate students research opportunities within and across disciplines thus fostering their inquisitive minds and better preparing them for post-graduate careers/education.*

Rationale:

The current strategic plan underscores a commitment to expanding research to enrich the undergraduate student learning experience. In the spring, the "Innovation in Pedagogy and Curricula" subcommittee of the Long Range Planning Task Force advanced this strategic priority in their recommendations, expanding the scope from an opportunity for "some" to an opportunity for "most." Undergraduate research, broadly conceived to include discovery-based and creative activities, provides students deeper understanding, competencies, and abilities for the discipline under investigation. Opportunities for research reinforce knowledge acquired inside the classroom, strengthen the relationships between undergraduate and graduate students and faculty mentors, and enhance the assimilation of knowledge through practical, hands-on experience.

Potential Obstacles:

- Research in any discipline requires additional resources (dollars, space, computing, faculty/staff time, etc.)
- How much instruction is required before a student can undertake a task that merits the definition of "research"?
- Learning objectives and outcomes of the experience need to be clearly defined
- Various disciplines define research differently
- What will students gain from the experience within each discipline? (Some more clear than others!)
- Collaboration between different disciplines and departments
- Standardization of an evaluation process across disciplines (off campus experiences could pose challenges)
- Addressing resistance and changing perceptions of UG research from "burden" to "benefit"

Unresolved Issues:

- The statement "opportunity for most" may be controversial; what about "for all"?
- Most (if not all) faculty feel that any students should have the opportunity to conduct undergraduate research, but not all practice what they preach.
- Not just for students preparing for graduate school (GPA>3.0!)
- How to integrate STEM-H and Humanities?
- Well-defined mentoring: faculty, post-docs, grad students, or a combination?
- Graduate students and faculty ability to successfully instruct undergraduate students. Graduate students and faculty understand that undergraduates in research have a transition period, and they should engage and educate undergraduates during this period.

Strategic Contribution:

Inventing the future begins with our undergraduate students! Undergraduate research – broadly conceived to include discovery-based and creative activities – is more educational than just giving students a chance to see what is involved in graduate school; it provides an experiential learning activity that helps students synthesize knowledge and skills acquired in the classroom. In fact, it provides the unique opportunity for students to *contribute* to knowledge in addition to be consumers of knowledge. All students benefit from the undergraduate research experience of creating, planning, designing, conducting, collecting and analyzing data, and connecting a research problem to an applied problem and its solution. In such a focused process, students will analyze, interpret, and synthesize information from a variety of sources; practice holistic reasoning; improve verbal, visual, and written communications skills; contribute to a team (e.g., university) effort; gain an understanding of the "bigger picture"; and enhance self-confidence and preparation for a career and/or post-baccalaureate education.

In addition to the learning advantages of undergraduate research, students significantly contribute to faculty programs. With minimal resources, undergraduate students tackle small projects that often constitute preliminary data for a major project and spawn new avenues to be pursued by professors. Such data frequently culminate in grant proposals, generate manuscripts, or advocate research programs as conference presentations.

KEY IDEA #3: *Virginia Tech seeks to engage globally*

Rationale:

Virginia Tech, its students and professors respectively, operates in a world where national boundaries become increasingly permeable. Moreover, the world is undergoing significant demographic shifts: Asia's population, and more importantly its economic influence, is growing dramatically, while such growth in Africa, Europe (particularly Eastern Europe) and South America is more moderate. Because little growth is anticipated in North America, it can be anticipated that student bodies and the professorship of leading universities become increasingly international. In addition, research projects – including the professors and students who conduct research projects – as well as institutions who sponsor those research projects become increasingly international as well.

- Each academic department establishes and/or expands its own exchange programs with universities located in other continents. Virginia Tech undergraduate students are encouraged to enroll at those partner-universities, while undergraduate students of those partner-universities study at Virginia Tech.

- Virginia Tech promotes and supports that each academic department establishes and/or expands exchanges for its professors and the professors of its partner-universities

- Each academic department partners with international institutions, corporations, and other international organizations and establishes internships for undergraduate students

- Promote and support opportunities for undergraduate students to engage with international graduate students and faculty members here on the Blacksburg campus, as well as connect with international student organizations engaged in outreach and education.

Potential Obstacles:

- Federal and state regulations
- Study abroad exchanges in academic settings demand financial recourses
- Inability to operate successfully in other countries with different customs and traditions

Unresolved Issues:

- The first impediment to engage globally is often the lack of foreign language ability

Strategic Contribution:

By means of operating internationally, Virginia Tech, its students and professors respectively, positions itself to increase its relevance in education and research globally. Virginia Tech positions itself to react to major demographic, economic, and cultural shifts.

Key Idea #4: *Promote Learner-centered Pedagogy in the Classroom*

<u>**Rationale**</u>:

Learning-centered pedagogical models encourage students to engage with content, one another, the professor, and, most importantly, the learning process. It encourages reflection, dialogue, and engagement, and requires a reliable assessment of content mastery. Learning-centered pedagogical models – compared with teaching-centered models – empower students to take ownership in their education. To promote learning-centered pedagogical models, the university must demand from its faculty to own a position on educational philosophy and support pedagogical and didactic training. It must also develop incentives that elevate the importance of instructional quality in evaluation for promotion and tenure.

<u>**Potential Obstacles**</u>:

- Unfamiliarity with various educational philosophies and its various pedagogical and didactic models
- Involves more work for both faculty and students
- Learning-centered pedagogical models demand more resources
- Already have too few faculty and this requires even more from those we have
- Classrooms often hamper learning-centered pedagogical models

<u>**Unresolved Issues**</u>:

- Incentives for some faculty to embrace learning-centered pedagogical models
- Students have to embrace learning-centered pedagogical models and accept that more time is spend learning
- How do you make certain topics and subjects something that can be "learned" rather than taught?
- That Virginia Tech values a great teacher on par with a great researcher or successful grant recipient
- The capacity of CIDER or another entity to adequately support faculty development
- Clarify students' roles and responsibilities in the process
- How to bridge the gap between the academic affairs "side of the house" and the student affairs "side of the house" to successfully integrate academics with co-curricular/community engagement

<u>**Strategic Contribution**</u>:

If our students come out of the university truly invested in their education, then they will continue this commitment and approach to their whole lives. The university benefits from an engaged student body that demands the most out of the faculty, staff and other students. The student's contribution to knowledge changes the dynamic of the student/faculty relationship to one more of an active partnership rather than passive consuming. An empowered faculty with a perception of students as involved contributors to the body of knowledge rather than receptors of information will dramatically augment teaching.