MOVING FORWARD 2012-2013

COURSE REDESIGN

JAMES MADISON COLLABORATIVE RESEARCH

VIRGINIA TECH COLLABORATIVE RESEARCH

IVERSITY OF VIRGINIA

GEORGE MASON UNIVERSITY OF VIRGINIA

innovation collaboration

entrepreneurship competitiveness

student outcomes

undergraduate researchers

consortium

engineering

industrial design

mathematics

art science

competitiveness opportunity

exploration

interactive experience

suitable technology

economic development

impact higher education entrepreneurship

articulation

vision cisco

kubi beam double

biology higher education

scale-up grants

mini grants

educational technology

forward thinking experience

engaging students in entrepreneurial experiences
What is 4-VA?

Innovation, Collaboration, Entrepreneurship

Technology and STEM Subjects

Collaborative Research

Faculty and Students from different universities coming together to accomplish great things

Other 4-VA Research Grants

Course Sharing

Universities collaborating to offer students a wider range of courses

Course Redesign

Developing courses to utilize new formats for course offerings

Technology and STEM Subjects

Harnessing group knowledge and modern technology to bring courses into the present

Innovation, Collaboration, Entrepreneurship

Faculty, students, and community leaders design a collaborative innovation space

Degree Completion

Universities develop an offering to help non-traditional students complete a degree

Contact

Contact information for 4-VA staff, industry partners, and featured JMU faculty and Staff

What people are saying...

It has been an honor to be engaged with The 4-VA initiative from its inception to date. I have seen the true power of partnership between government, education, and industry coalesce around a common goal. Virginia understands the significance of higher education being the cornerstone of our country’s economic growth, and through the strong leadership of Governor McDonnell, and the President’s and senior leadership of the four founding institutions—JMU, UVA, GMU, and Virginia Tech—we are seeing transformation take place in a meaningful, sustainable way.

— Carol Stillman, Cisco Systems, Inc.

Though we just started this experience four weeks ago, I believe the variety of students’ backgrounds and educations enriches the learning experience inside the classroom, especially when learning a challenging language like Arabic. My students at VT had different language skills and their participation with JMU students has had a positive impact so far.

— Israa Alhassani

With my unique background as being a practicing medical clinician coupled with my experience as a university educator, I am constantly looking for ways to make content more relevant for students. 4-VA provides me with the opportunity to further expand this mission.

— Erika Kancler, MD
What is 4-VA?

4-VA is a collaborative partnership between four Virginia universities. Its mission is to promote inter-university collaborations that leverage the strengths of each partner university in order to accomplish much more than any individual university could achieve alone. In addition, 4-VA strives to do the following:

1. decrease the cost of delivering instruction
2. expand access for all Virginians to programs preparing them for rewarding careers
3. increase research competitiveness
4. enhance the success rate of students in Science, Technology, Engineering, and Mathematics (STEM) courses and programs.

Unity is strength...when there is teamwork and collaboration, wonderful things can be achieved.

– Mattie Stepanek

History of 4-VA

In 2010, the presidents of four universities combined forces with the governor, other members of the Virginian government and Cisco Systems, Inc. to launch 4-VA in response to the Governor’s Higher Education Commission and the Governor’s Commission on Economic Development & Job Creation.

The commissions are focused on education and innovation to “better position Virginia to create jobs and grow the economy.”

That same year, 4-VA began implementing a telepresence system so the universities’ administration, staff and faculty could work toward their common goals in a live virtual environment. With two videoconferencing rooms on each campus and the infrastructure in place, 4-VA was ready to focus on its initiatives.

4-VA at JMU

4-VA at James Madison University is housed under the Department of Information Technology and works closely with Dale Hulvey, the Assistant Vice President of Information Technology. Nick Swayne is the Director and Campus Coordinator. Kai Brokamp is the Assistant Director and also works closely with the 4-VA Graduate and Undergraduate Assistants.

The Board

4-VA’s direction is set by the management board, which consists of the four university presidents, Virginia’s Secretary of Education, the Executive Director of the State Council of Higher Education for Virginia (SCHEV), and Carol Stillman, the Business Development Manager for Higher Education for Cisco.

Universities Collaborating to Achieve Virginia’s Goals for Higher Education
Developing a Diagnostic Tool for the Next Generation

With outbreaks of whooping cough on the rise in the United States—even with mandatory vaccinations—it has become increasingly important to detect this lung infection at its earliest stages.

With the assistance of Dr. Gordon Archer at Virginia Commonwealth University, Dr. Louise Temple, a JMU professor in the Department of Integrated Science and Technology, has started studying bordetella, the bacterium that causes whooping cough.

Focusing their research on isolating bordetella, Dr. Temple hopes to develop a diagnostic tool that will decrease the time it takes to diagnose the bacterial disease. This tool will also increase knowledge of the bacteria, allowing researchers to better understand how and why whooping cough infects humans and is spread to others.

Without the support of 4-VA, Dr. Temple said, “I might have been able to do a little bit on it, but I couldn’t have paid students in the summer, so we wouldn’t have gotten as far as we have and wouldn’t have had this really successful summer.” Dr. Temple said she is grateful for the opportunities 4-VA is providing in terms of creating opportunities for students and enabling the creation of relationships between universities.

Finding a Cure for Dry Eye

“Cloning this gene is the first step towards development of a treatment for dry eye in humans.”

Dry Eye is a fairly common condition, affecting roughly 35 million Americans. Those who have it typically produce tears of inadequate quality or quantity. Dry air, wind, allergies, medications, disease, aging, wearing contact lenses and spending long hours in front of a computer are just some of the potential causes of the uncomfortable sensations and blurred vision brought on by the condition. Artificial tears are commonly used as a temporary solution for dry eye, but what if there was a treatment that could stimulate new tear production?

With funding from both a 4-VA Mini Grant and a Scale-Up Grant, Dr. Bob McKown is working to find just that—a treatment for dry eye in dogs that could potentially develop into a new topical therapeutic for the treatment of dry eye in humans. A professor of Integrated Science and Technology at JMU, Dr. McKown is collaborating with Dr. Ian P. Herrling from the VA-MD Regional College of Veterinary Medicine and the College of Veterinary Medicine at Virginia Tech.

A human tear protein called lacritin and the canine version of lacritin are at the center of Dr. McKown’s research. The goal of his Scale-Up Grant is to clone the canine gene for lacritin, produce the canine lacritin protein in bacteria, and purify it for animal studies. The purified protein will be sent to the College of Veterinary Medicine at Virginia Tech and tested for stimulation of tear production in canines. If successful, this research could directly result in a treatment for canine dry eye, which would have an important impact on dry eye syndrome in humans as well.

“The safe and effective use of lacritin for treatment of dry eye in an animal model system would help advance development of this potential new drug into human clinical trials,” said Dr. McKown.

The two grants awarded to Dr. McKown have also provided the means to hire two student researchers to focus solely on the project. Cara Soyars and Alan Tate assisted with dog tear analysis in Dr. McKown’s lab at JMU during the summer of 2013.

Cloning this gene is the first step towards development of a treatment for dry eye in humans, an accomplishment that will improve the lives of many and demonstrate the power of collaboration in funding and research.
What do pharmaceuticals and cosmetics have in common with avalanches and lava flows? They are part of a large class of materials known as Soft matter—the focus of research led by Dr. Klebert Feitosa, a Physics and Astronomy professor at JMU. Soft matter is characterized by complex fluid behavior whose understanding will have deep implications for improvement of manufacturing processes, as well as predictions of natural phenomena such as avalanches, mudslides and lava flows.

You may be wondering, “What is soft matter?” Soft matter is a term used to describe many systems that are disordered and fragile. Foams, paints, gels, grains, and emulsions are some very familiar examples.

Although soft materials have been around for a long time, only recently have scientists begun to explore their intricate dynamics, searching for a unified framework to explain and predict their complex behavior. In order to combine resources to further this endeavor, Dr. Feitosa has proposed and was awarded a mini-grant titled Bringing Together a Community of Soft Matter Researchers in Virginia. This initiative will bring keynote speakers and researchers together for a Soft Matter Workshop event at James Madison University on February 11th, 2014. This workshop will facilitate statewide networking, communication and collaboration on the topic of soft matter research.

Principal Investigator:
Dr. Klebert Feitosa

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Researching the Shenandoah Valley: Coldwater Ecosystems

River systems support complex networks of life, including microscopic algae, animals, and of course, humans. Dr. Christine May, an assistant professor of biology at JMU, is no stranger to the significance of these systems. By forming collaborations with scientists, businesses, and government departments and agencies, Dr. May has been able to increase awareness for research and educational needs for rivers, streams, and springs in the Shenandoah Valley.

The city of Waynesboro, located 45 minutes south of Harrisonburg and is at the center of Dr. May’s grant. As the city strives to revitalize itself by increasing attractions that draw tourism to this gateway to the Shenandoah Valley and the Blue Ridge Parkway, Dr. May and her collaborators became involved in the effort to highlight unique attributes of the South River. The overarching goal of this endeavor is to increase interest in the development of the Center for Coldwaters Restoration, which will serve as a collaborative research center and educational facility for aquatic ecosystems.

“The mountain streams and large river valleys of Virginia are iconic ecosystems that provide critical habitat for native brook trout populations,” said Dr. May, “By better understanding our treasured aquatic resources, we can develop better conservation and management strategies.”

In September 2013, Dr. May and collaborators oversaw the Mountain Stream Symposium II: Continuing Challenges for Critical Ecosystems, a one day symposium that was conducted to reach their goal—increasing awareness. The symposium was open to the public, and featured fourteen speakers from various Virginia universities and government agencies. Also featured were poster presentations and displays submitted by participants of the symposium, including several community-based programs.

Principal Investigator:
Dr. Christine May
Cross Country Adventures on an Electric Motorcycle

On June 6, 2013, former professional motorcycle racer Thad Wolff drove the electric motorcycle that broke the cross-country record. The journey totaled 2,500 miles and went from Jacksonville, Florida to Santa Monica, California. Even with a severe rainstorm and sweltering heat, it only took 84.5 hours, just over three days. The previous record was about six days.

But Mr. Wolff didn’t do it alone. Dr. Robert Prins, a Professor in the Department of Engineering at JMU had partnered with Moto Electra, a Shenandoah Valley electric motorcycle company. Together they have been conducting research on the efficacy of electric mobility. The cross-country trip was a test based on their research.

A support team from JMU and Moto Electra rode along with Mr. Wolff in a support van. Will Hays, a sophomore at JMU and part of the research team on the trip said “This experience taught me a lot about working on research with a team and adapting to situations along the way.” Hays was in charge of the data, tracking amps, GPS data, wind speed and direction, and temperature.

Thermal Conductance for the Next Generation

PORTABLE ELECTRONIC DEVICES such as laptops, tablets, and cell phones are increasingly becoming an integral part of our daily lives, creating a demand for constant improvement. As devices improve in functionality, the changes in speed (bit rates) and size (making processors as small as possible) generate excess heat. This heat can be a health hazard and can damage the devices themselves. Improving a device’s ability to keep up with these changes and dissipate heat is therefore crucial.

With the help of a 4-VA Mini Grant and a Scale-Up Grant, Dr. Costel Constantin, a Physics professor at UVA has partnered with Dr. Patrick Hopkins, a Mechanical and Aerospace Engineering professor at UVA. Together they will study the transfer of heat between materials in these devices.

When cooking on a stovetop, heat transfers from the stove through the bottom of the pan to the cooking surface of the pan, in order to heat and cook the food. Although the stovetop itself may be hot after a minute or two, it could take a while to heat the pan because of thermal conductance, or transfer of heat particles. As the heat particles bounce back and forth within the first material—for example, the stovetop—only some of these particles are transferred to the second material—the pan.

When applied to microelectronics, such as cell phones, Dr. Constantin said, “It is increasingly important to study the Kapitza conductance of interfaces to fully understand and engineer the thermal transport in next generation nanodevices.” Kapitza conductance, also known as Kapitza resistance, is a measurement of thermal flow resistance.

Dr. Constantin and Dr. Hopkins’ efforts have already been a success, receiving recognition from the Commonwealth Research Commercialization Fund as well as a $100,000 grant to continue this research. In addition, funding from the 4-VA Scale-Up Grant has enabled three students to attend conferences and utilize labs and equipment at UVA, which would have been otherwise impossible.

Other 4-VA Research Grants

October 2012
Dr. Nathan Wright – Structure and Function Studies on Dispersin Homologues in Enterotoxic Bacteria

January 2013
Dr. Anne De Piante Henriksen – Using the Mouse Four – Core Genotype Model and Estradiol to Elucidate the Effects of Gonadal Sex vs. Genes on RNA Sequences in the Cerebrum
Dr. Michele Estes and Dr. Stephanie Moore (UVA) – Reaching the Greatest Number of Learners: Improving Access to STEM Undergraduate Education Through Online Engineering Labs for Students Across Virginia
Dr. Roschma Wunderlich and Dr. Mark Gabriele – Design of Innovative Virtual Human Anatomy Modules to be Shared Across the Commonwealth
Dr. Susan Halsell – Seeding a Research Collaboration: Regulation of Dendritic Morphogenesis in the Genetic Model Organism, Drosophila melanogaster
Dr. Louise Temple – Finding and Analyzing Methicillin Resistance Genes in Viruses from Environmental Samples in the Shenandoah Valley: a Partnership between JMU and VCU

May 2013
Trudy Cole – Visual Literacy, Beyond Linguistic Communication
Dr. Anca Constantin – The WISE Search for Megamasers
Dr. LouAnn Lovin – Fraction Schemes and Operations: An Extension to Prospective PreK-8 Teachers
Dr. Robert Nagel – Distributable Stereo Hearing Test Kit
Dr. Teresa Harris – Effects of Preschool Attendance on Middle School Outcomes in Virginia
Dr. Anne De Piante Henriksen and Dr. Patrick Hopkins – Virginia Clean Fuels Student Partnership 2013-2014

July 2013
Dr. Christoph Berendsen – Structure of human BST-2 with BST-2 antagonist Vpu
Dr. Carol A. Hurney – Exploring Tail Development from Three Ends
Dr. Christopher Berendsen – Structure of human BST-2 with BST-2 antagonist Vpu
Dr. Patrick Ludwig – Scientific teaching workshop

Dr. Robert Prins

This experience taught me a lot about working on research with a team and adapting to situations along the way.

Dr. Costel Constantin

As devices improve in functionality, the changes in speed and size generate excess heat.
Benefits

Course Sharing reduces the costs of uneven student to faculty ratios, commuting, class cancellations and travel abroad. Prior to 4-VA's existence, for example, an advanced business Chinese course was only available to those JMU students who paid for a semester abroad. As another example, when a professor of Korean retired, JMU relied on 4-VA offerings to teach Korean rather than cancelling classes until a new professor was hired.

For Example...

Shared courses mean that students don’t have to compromise their goals based on course availability. Consider the following beneficial situations that have occurred since 4-VA began sharing courses:

- A student in the Integrated Science and Technology Graduate program was able to enroll in a graduate level Community Ecology course being taught at George Mason University. This student had a very restrictive schedule including an assistantship, part-time job, and heavy course load. The ability to take this class gave her schedule more flexibility and allowed for her to stay on track with her predicted graduation date.
- Through the shared course program we were able to share a course in Population Ecology to students at UVA. In this situation, the Population Ecology course had previously been taught by a faculty member at UVA who then went on to retire. A faculty member here at James Madison University, Patrice Ludwig, was familiar with the UVA course and began developing a similar course to be shared in telepresence. We were able to share one section of this Population Ecology course to UVA and achieved maximum enrollment.

Moving Forward

Over 125 students have participated in shared courses with JMU since Spring 2012 and preparations are now underway to create opportunities for shared courses in physics and engineering between 4-VA institutions! New and existing technologies will be adapted so that students and faculty can effectively share projects and lab experiences.

Colored according to host university

- JMU
- GMU
- VT
- UVA

planned courses

art

photography

literature

critical thinking on business issues

business

advanced

business chinese

science & engineering

ornithology

population ecology

graduate ecology

advances arabic

(grammer & communication)

advanced italian

(grammer & communication)

advanced chinese

language

analytical intelligence

political science

international crisis simulations
Course Redesign

We all remember the worst class we ever took in college. Lectures didn’t correspond to the book, activities were outdated, and there was no interactive learning. Students can only experience the value of higher education when classes are engaging, accessible, and inspiring. Through Course Redesign, 4-VA hopes to increase the value of classes with fresh and up-to-date information and platforms.

Through 4-VA, professors can make classes more accessible by redesigning them for online use, or by developing classes that can be shared with other 4-VA institutions. In addition, updating courses to integrate technology and new methods of teaching and learning can make classes more engaging.

Changing the Way We Teach: A Scientific Teaching Workshop

These days science, technology, engineering and math (STEM) subjects are increasingly part of an integrated curriculum, transcending the limits of individual subjects and generating increased interest from students. Gone are the days of mundane lectures and PowerPoint slides—at least that is what Dr. Patrice Ludwig of JMU’s Department of Biology is hoping.

In collaboration with two of her colleagues from the Department of Biology, Dr. Marta Bechtel and Dr. Kerry Cresawn, Dr. Ludwig is planning a one-day Introduction to Scientific Teaching workshop. Scheduled for Spring 2014, the workshop will provide faculty members with new teaching methods and activities that will, as stated in their course redesign proposal, “lead to improved student critical thinking and thus student success while at JMU and in the workforce.”

The Spring 2014 workshop is part of a series that includes a workshop dedicated to JMU Biology faculty, to be held in Fall 2013, and a workshop for all 4-VA schools, to be held in the late Summer 2014.

Virtual Human Anatomy

With over 1,000 seats available for JMU students to take a human anatomy course (BIO 290) each school year, it’s no wonder that the professors are looking for innovative and creative ways to adapt the reputed JMU anatomy course model to the growing number of students taking the course.

Dr. Rosnna Wunderlich and Dr. Mark Gabriele, both professors in the Department of Biology at JMU, are developing online modules for the course that will increase the amount of hands-on instruction time and decrease the amount of time introducing the material. Students will have access to the modules before completing the lab, allowing them to become familiar with the content outside of the classroom, as well as access to the modules for reference after the lab is completed.

“Each picture or diagram we see in class corresponds to a module online,” explained Caitlin Biddle, a JMU student currently enrolled in BIO 290. “These images also appear on the tests, so this is great practice to see different parts of the body from all different angles and views.”

Conferences

As one of 4-VA’s main initiatives, course redesign has impacted numerous university-level courses. However, 4-VA has reached beyond the university level, reaching out to the Virginia Department of Education, Virginia high school educators, and representatives from the Virginia Community College System to redesign courses for students as they move through different levels of education. Through 2 conferences, 4-VA established relationships among many different educators, focusing on Biology courses...
Robots are the electronics of the future, an idea that has been around for decades. In Spring 2014, Dr. Kevin Giovanetti, a professor in the Department of Physics and Astronomy at JMU, is bringing this idea to life through a course in robotics and mechatronics. Not only is Dr. Giovanetti planning to teach his students about these topics—which combine computer engineering, mechanical engineering, and prototype construction—but he is also incorporating them into the course design.

Partnering with Virginia Tech, Dr. Giovanetti will be sharing this course utilizing Kubi Revolve Robotics systems as well as Zoom, a video conferencing system.

College Wars: Simulating International Security Situations

The 4-VA course, “VA College Wars” provides students with an in-depth introduction to the field of international security by using a wide array of approaches to examine the nature and objective of security at state and international levels. The theoretical framework for the course examines various concepts of human, national and international security, various threats to security, and ways in which states have sought to address them both unilaterally and in multilateral organizations. Students will be trained to apply various conflict resolution methods based on these concepts.

Since this course aims to provide both a theoretical understanding of security as well as exposure to a wide range of professional positions, students will be required to apply the security techniques and approaches in various simulations. Simulations may include maritime security, energy security, humanitarian intervention, and simulations of the wars in Afghanistan and Iraq.

Teaching Photography with Technology

Daniel Robinson, Assistant Director of the Institute for Visual Studies at JMU, is currently redesigning a photography course that will be taught utilizing telepresence in Spring 2014. This course will help meet the goals of the Institute for Visual Studies by promoting discovery and research in terms of visual projects and innovation.

Technology Teaching Technology

Dr. Chris Mayfield earned his first degree in Computer Science in 2005 at the University of Utah. Since then, he has interned at IBM and Google and is currently redesigning a computer science course for 4-VA. The availability of computer science education, one of Dr. Mayfield’s scholarly interests, will expand as a result of his course redesign, which is projected to be offered to students starting in spring 2014.
Robots in the Lab

ORKING WITH Virginia Tech, an institution known for its engineering programs, required a few changes for Dr. Kevin Giovanetti. Sharing a robotics course with Virginia Tech meant developing a new lab where students and faculty could interact seamlessly regardless of location. Dr. Giovanetti had been teaching robotics courses to JMU students, but their lab needed updating with Telepresence equipment that would allow professors at Virginia Tech the ability to see student work in action.

By implementing Telepresence calling systems and Kubi Revolve Robotics systems, which are mounts that can pan and tilt iPads, students and professors can share computer screens and pan to different parts of the room. The lab is projected to be completed in time for the start of the Spring 2014 semester.

Kubi, a new company based in San Francisco, California, is working with 4-VA at JMU to develop computer interfaces that will continue to better suit student and faculty needs.

Sharing STEM Courses through Telepresence

ELPRESENCE CLASSES have broken the boundaries of space and time, making classes available in situations where they would have otherwise been impossible. The primary limitation in Telepresence classrooms today is that students and instructors can't interact directly with each other. In situations where an instructor would normally look over a student's shoulder to see what she is struggling with, students must instead verbally articulate their questions over a remote system. This can take up valuable time and generate frustration, especially for hands-on classes.

The Telepresence lab planned for the Health and Human Services building at JMU has been designed to break this boundary, too. With use of the Suitable Technologies Beam and other Telepresence systems, students will feel like their professor is in the classroom with them. Beam is a remotely controlled robot on wheels with a screen displaying the controller. With the ability to move around the classroom and individually or collectively guide students, instructors can look over a student's shoulder.

Bridging the Gap Between Technology and Education

HE SUCCESS of 4-VA's course redesign and course sharing endeavors required looking at more than just how to make classes available online and instructing faculty on how to use the Telepresence equipment. A lot more went on behind the scenes to establish highly effective learning environments.

Dr. Michele Estes, Dr. Juhong “Christie” Liu and Dr. Shenghua Zha spent time researching requirements for STEM learning environments at JMU and did a case study on the technologies and techniques that could support course collaborations among 4-VA institutions. Their research led to a STEM Faculty Technology Fun Day that allowed faculty members to test and evaluate prospective methods and technologies, such as the Suitable Technologies Beam and Double Robotics mobile telepresence systems. As a result of their research and evaluation of these technologies, these systems and new software applications will be utilized in the Robotics lab for course sharing with Virginia Tech.
A S AN INTEGRAL part of the Harrisonburg community, JMU continues to enrich and preserve aspects of the area’s history. Most recently, JMU has partnered with the City of Harrisonburg to renovate the historic Cassco Ice House Complex. Built in 1934, the Ice House was a landmark in Harrisonburg’s downtown, but as the city grew, the building was forgotten. With a $500,000 grant from the Virginia Department of Housing and Community Development to the city, 4-VA at JMU will help develop a new space, turning the original name into an acronym to reflect its updated veneer: Innovation, Collaboration and Entrepreneurship (ICE).

As part of the project Audrey Barnes, an Assistant Professor of Industrial Design at JMU, is having her Industrial Design (INDU) 492 students design furniture for the space. With 16 upperclassmen enrolled in the course, Professor Barnes has split them into teams of four to develop full-scale furniture prototypes. The students will then present their prototypes to those involved with the ICE House project to determine which design will be mass-produced for the space. The opportunity 4-VA has given her to apply classroom topics to real-world situations, Professor Barnes said, has “encouraged new ways of thinking about education and collaboration.”

The ICE House will be advertised as an entrepreneurial prototyping lab, where JMU students and faculty can work together with Harrisonburg residents, potentially developing new businesses and products. In this sense, not only is 4-VA encouraging collaboration and innovation among the four schools, but also between communities and disciplines.
For some students, life doesn’t accommodate finishing a degree...

The 4-VA program has made it possible for JMU faculty to redesign face-to-face classes into dynamic, interactive online classes for the Adult Degree Program. In just its first year, 4-VA has supported the redesign transition for 23 unique courses concentrated in 6 distinct modules. These modules can be combined to meet the relevant needs of each student; ultimately designing a specific program of study that satisfies the core requirements of the Individualized Study major. Modules developed this year are: business technology, entrepreneurship, public policy and administration, and sustainability.

In addition, funding from 4-VA has supported online course development for JMU’s new RN-BSN program which is now available fully online, as of Fall 2013. The BN to BSN program provides a supportive environment for students within a community of learning, and offers a foundation for professional practice. Offering this program fully online allows nurses across Virginia to attain their bachelor’s degree in nursing, which is quickly becoming the standard across all healthcare settings.

Classes are offered online to allow students to maintain employment while completing [their] degree.

In just the first year the total individual course enrollments has reached 141 students. A computer science/programming module is in development, as are classes that will fulfill general education requirements in natural science, humanities, and written communication for students needing those core liberal arts courses.
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