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FEATURES

Energy Strategies: Bringing a Master Plan to Life

A growing number of colleges and universities across the country are incorporating renewable energy, energy efficiency, and environmental stewardship into actionable plans. This shift in institutional values reflects strategies for addressing ongoing ecological concerns just as it serves the connectivity, reliability, and efficiency of campus operations that play a critical role in providing a competitive and ideal learning environment. Strategic plans are foundational in terms of reaching institutional goals, and certainly they play a vital role in determining and satisfying environmental initiatives.

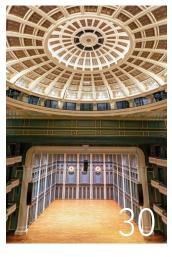
Art That Inspires: The Fisher Center for the Performing Arts at Belmont University

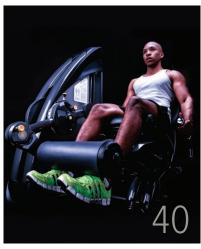
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COLUMNS



SPOTLIGHT / ON OUR COVER

Excellence in Pharmacy Education and Research at Cedarville University

McKenzie Grinalds, Assistant Professor of Pharmacy Practice at Cedarville University, specializes as a neurology pharmacist. This position allows her to teach in the school of pharmacy, continue her work as a licensed pharmacist, and engage in pharmacy research targeted at improving pharmaceutical care for people with epilepsy. Grinalds received personalized support for her research through her competitive selection as a participant in the American College of Clinical Pharmacy Foundation's MeRIT Program.

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Editor's Letter

MARCH 2023



This season means a new start to me; it is nature's way of telling us that new beginnings are here for everyone. Across your campuses, new beauty is beginning to emerge and put on a show that we have waited for all winter long. To me, it another reminder that the sweetest things in life are the little things that sometimes we take for granted because we are blessed to have so much.

Last night, I was able to have dinner with my daughter, and I got to hear about her week and what was happening in her life as we talked about doing future things together and spending time enjoying the upcoming season. She loves a local river and being there, relaxing, and just spending time with family and friends. It is not a fancy place; just a nice sand beach on a river with a rope swing and trees and the river singing as it flows over the rocks. But she remembers the times we have been there, and she makes sure that we are going to go there again.

All of us know how special time is; it truly is the most precious gift we can exchange with our loved ones. As many of you might remember, my daughter has dealt with serious life issues. Several times, we almost had to say our goodbyes, but thankfully we have been given the gift of more time to spend together. But we do not need the reminder to know that family—the ones we are given and the ones we choose—are life's most precious of things.

After serving in the U.S. Navy, my son met a wonderful lady, and they have chosen to begin a life together. This month, after many delays, they will get to go on their long-awaited honeymoon to the wonderful world of a little mouse that many people love. I have no wonder at why he wants to spend time with his new wife in the place where many of our most precious times as a family have happened—where for that week or so we forgot about all distractions and just enjoyed each other.

Looking on these two events, I am reminded once again that time spent present with the ones who love you and whom you love are the most beautiful gifts we can be given. My hope for you today is that you can take time to be present in small or big ways with your loved ones and enjoy the renewal that they give as we embark upon the season of newness.

Thank you for the opportunity to talk a little differently in this letter. It is always a privilege to help you to bring the best experience to the students, faculty, staff, and visitors who cross your campuses every day, so let me say thank you for spending time with us—

In gratitude,

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Excellence in Pharmacy Education and Research at Cedarville University

BY CYNTHIA MWENJA, PhD

McKenzie Grinalds, Assistant Professor of Pharmacy Practice at Cedarville University, specializes as a neurology pharmacist. This position allows her to teach in the school of pharmacy, continue her work as a licensed pharmacist, and engage in pharmacy research targeted at improving pharmaceutical care for people with epilepsy. Grinalds received personalized support for her research through her competitive selection as a participant in the American College of Clinical Pharmacy Foundation's MeRIT Program.

Denise H. Rhoney, Ron and Nancy McFarlane Distinguished Professor in the University of North Carolina at Chapel Hill Eshelman School of Pharmacy, says that schools of pharmacy can offer "opportunities for synergy" with other health professions departments such as nursing, dentistry, and medicine. Pharmacy program can also develop undergraduate courses to gain students' interests in learning how to work with diverse groups of people to solve problems in this field. Rhoney points out that prospects for collaboration are available across campus—schools of pharmacy have many opportunities to branch out and highlight the diverse aspects of the pharmacy discipline to students across campus. While many people think of pharmacists as people in white coats behind the drugstore counter, Rhoney stresses the importance of remembering that the field of pharmacy was originally driven by research questions of how to best prevent, identify, and manage problems with medication.

Students in pharmacy programs spend a total of six to eight years in school, learning how medicines affect bodies. According to Aleda Chen, Associate Dean and Professor of Pharmacy Practice at Cedarville, pharmacists are among the most accessible healthcare providers. These programs train people who will work in many different parts of each community to provide service to patients—she notes that even communities without healthcare clinics often have pharmacies available.

Research

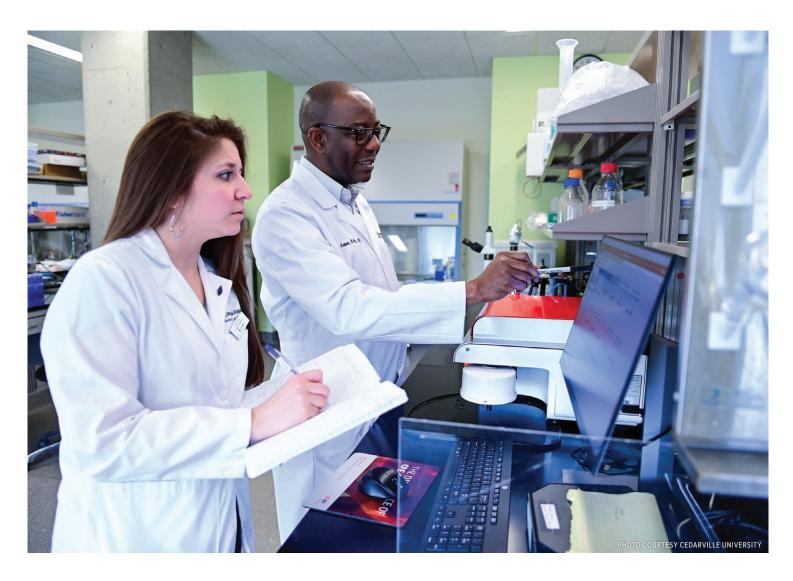
Grinalds' career reflects the expansive potential available within the pharmaceutical field. As a member of the American College of Clinical Pharmacy (ACCP), she was chosen to be part of the MeRIT Program through the ACCP Foundation. This competitive program, she says, equips early-career pharmacy scholars to be better researchers by pairing program participants with an ACCP research mentor, along with a local advisor.

Rhoney says that pharmacists must go beyond mere technical skills and fact memorization; they must also learn to research effectively—how to ask questions, answer them, and think about the implications.

MeRIT program participants engage in this process beginning with a one-week "boot camp" followed by two years of ongoing mentorship. Chen has served Grinalds' on campus mentor for the MeRIT program, and Rhoney was her ACCP assigned mentor. Through the process, Grinalds identified questions that hadn't yet been answered, then narrowed her focus to a feasible topic that interested her.

As a result of her work with Rhoney and Chen, Grinalds published "Scoping Review of Rational Polytherapy in Patients with Drug-Resistant Epilepsy," with Chen, research assistant Caleb Yoder, and two others as co-authors. This research considers how pharmacists might most rationally choose the right combination of drug therapies for individual epilepsy patients. Grinalds says that specific combinations of drugs have not yet been tested, and both patients and practitioners would benefit from having better evidence to make prescribing decisions.

This project, she says, has opened research doors for her, and she hopes in her future research to continue answering the questions



that remain after the review was completed. She is currently laying the groundwork for this research and hopes to collaborate with peers at other institutions in order to locate a large enough research population to conduct the next study she envisions. Rhoney says that Grinalds' progress over the two years shows the value of mentorship; she has "soaked up" the experience to build on her already impressive strengths. Additionally, receiving mentoring from more than one person can offer multiple helpful perspectives to budding researchers.

Regarding faculty research, Grinalds says, Cedarville promotes a spirit of collaboration; she is thankful that she does not have to focus on author hierarchy—all research publications count toward tenure and promotion decisions. This institutional support, she observes, fosters collaboration and leads to more faculty productivity. Grinalds also points out that Cedarville's

supportive atmosphere encourages research partnerships with faculty members working at other institutions.

Mentorship and Teaching

Cedarville also values mentorship in its own programs; it provides training and pay for full-time students to serve as research assistants for faculty members. The students can help with literature reviews, data collection, IRB applications, research posters, and the like. The students also get the chance to present alongside the faculty member. Chen says that it is important to bring students into research so that they can see firsthand how research and practice work together to advance science and meet patient needs.

Caleb Yoder, Cedarville University Student Pharmacist (2025) and Research Assistant in the Department of Pharmacy Practice at Cedarville, worked with Denise H. Rhoney, Ron and Nancy McFarlane Distinguished Professor in the University of North Carolina at Chapel HillEshelman School of Pharmacy, says that pharmacists must go beyond mere technical skills and fact memorization; they must also learn to research effectively—how to ask questions, answer them, and think about the implications.

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As a neurology specialist, Grinalds rounds with the neurology teams to focus on helping patients dealing with issues such as epilepsy, multiple sclerosis, migraines, and similar concerns. Rhoney discusses the value of having pharmacists at patients' bedsides; their insights on disease and relevant medications can prove crucial for patient care. Grinalds on the epilepsy scoping review; this research, he says, was his primary focus during his first year in the pharmacy program. Yoder appreciates learning about the prevalence and importance of the topic as well as seeing how Grinalds organized the research and kept the project on track for completion. Now in his second year in Cedarville's pharmacy program, Yoder is continuing in the research program on another project.

As a pharmacy student, Yoder is excited to see the role of the pharmacist expanding into more settings. He notes that pharmacists have unique drug knowledge and can supply options for optimal therapy for patients. These insights, he says, make the pharmacist an essential part of a patient's care team. In addition to being a graduate student, Yoder works in a hospital pharmacy; this job gives him a direct hand in patient care. Beyond the subject content of the classes and passion

for the field of pharmacy that Grinalds brings to the classroom, Yoder particularly appreciates the extracurricular guidance and support she offers. Along with course content, Grinalds offers tips for "surviving as a student in general," study tips, and "good resources for how to study well," Yoder reports. Yoder appreciates the well-rounded way that Grinalds prepares students to succeed as future pharmacists and researchers.

Cedarville's approach to mentoring extends to faculty development and mentoring, as well. Through her colleagues, Grinalds has learned to promote active learning through the flipped classroom strategy and some team-based learning methods. These strategies extend her previous pedagogical instruction. During her residency training, Grinalds earned a teaching certification for pharmacists. In earning this certification, she developed classes and lectures, as well as gaining

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classroom experience. Currently in her fourth year of teaching, Grinalds was in the second Doctor of Pharmacy (Pharm.D.) graduating class at Cedarville. She says she is grateful to invest in students alongside the faculty members who taught her.

Cedarville has a module-based program in which students rotate through three-week blocks of classes, though there are some semester-long classes, as well. Even if she is not teaching in a particular block, Grinalds says, she often provides guest lectures in her areas of expertise, and most of her teaching load occurs at the graduate level. During the students' third year, Grinalds teaches a class that "brings all of their previous classes together before clinical rotations," re-grounding them in the attitudes, skills, and knowledge they will need as they go into teaching and pharmacy practice. For this vital course, Grinalds makes sure to double-check every term to make sure she is teaching students about current research, guidelines, and new drugs that have been approved. She also stays up to date with the latest in pharmacy education through her membership in the American Association of Colleges of Pharmacy (AACP), which is "the national organization representing pharmacy education in the United States," according to its website.

Working Pharmacist

A licensed and working pharmacist, Grinalds serves 50% of her faculty appointment at Premier Health's Miami Valley Hospital working as a Clinical Pharmacy Specialist in Neurology. She says that universities and local hospitals have varying arrangements, but such affiliation agreements are common for those working in pharmacy practice programs. As a neurology specialist, Grinalds rounds with the neurology teams to focus on helping patients dealing with issues such as epilepsy, multiple sclerosis, migraines, and similar concerns. Rhoney discusses the value of having pharmacists at patients' bedsides; their insights on disease and relevant medications can prove crucial for patient care.

Becky Sillaman, System Director of Clinical Pharmacy Services at Miami Valley Hospital, oversees the practice site for Grinald's pharmacy work. This position, Sillaman says, gives Grinalds the opportunity to interact with patients and providers. Additionally, Sillaman says that Grinalds has been instrumental in helping to build new, consistent orders into the hospital's medical software system; these updates have been a necessary response to an expansion of the hospital's oncology infusion centers. Grinalds' existing relationships with the doctors involved—as well as her experience working with patients—have proven "tremendously helpful," Sillaman notes; she has been particularly effective in getting diverse providers to agree to the systemization of these order sets.

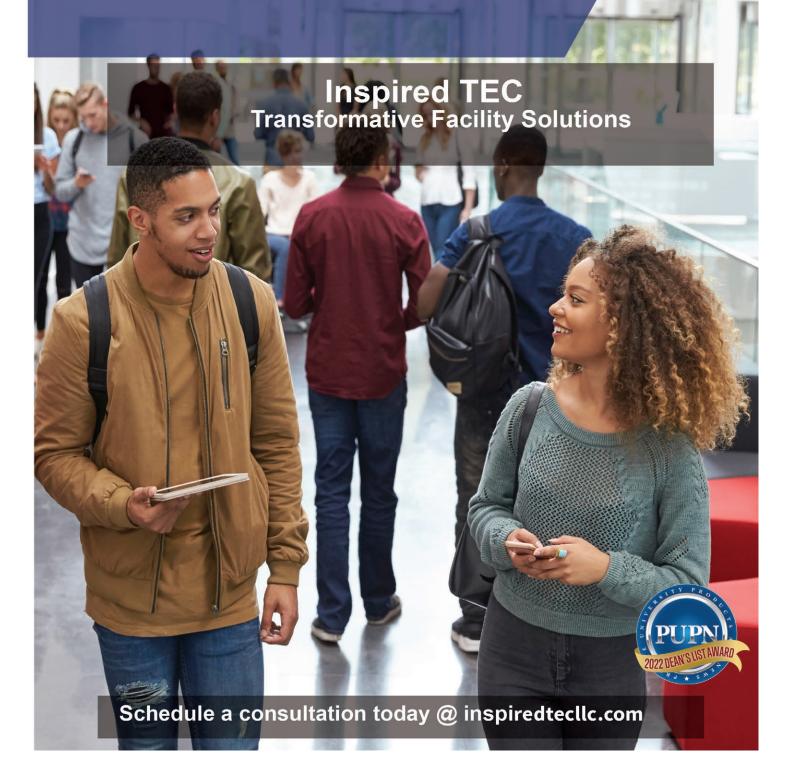
Sillaman says that the affiliation agreements between Cedarville and Premier Health have been in place for over a decade. The people who serve in these dual roles need excellent

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EMPOWERING THE FUTURE AT PRIVATE UNIVERSITIES

Optimizing Energy Management Enhancing Health and Wellness Elevating Sustainability



Cedarville's program offers a strong model in that it encourages faculty members to incorporate students into the research process. This approach ensures that students are trained as pharmacists and researchers. time management and interpersonal skills, since they need to balance expectations and due dates for two employers and workplaces. Grinalds, she says, meets these demands beautifully; she has an excellent ability to collaborate.

Takeaways

Colleges and universities considering establishing or expanding their pharmacy programs need to think carefully about the qualities that faculty members in this area need. Chen commends the ways that Grinalds "thinks deeply and creatively" about both her pharmacy work and preparing students to work in this profession. Additionally, Chen says, Grinalds continues to model scholarly inquiry and advance the profession's collective knowledge. Grinalds' talents were apparent even as a student, Chen says; she points out that administrators should be aware of the benefits of supporting

faculty members in recognizing and mentoring such promising students.

Cedarville's program offers a strong model in that it encourages faculty members to incorporate students into the research process. This approach ensures that students are trained as pharmacists and researchers, Rhoney says; she goes on to state that she admires private institutions like Cedarville in their willingness to give back to the community by supporting faculty members like Grinalds who have a "passion for developing research." Grinalds, as both a recent graduate and current faculty member, exemplifies the potential of all aspects of this exciting field in her teaching, research, and pharmacy work.



ABOUT THE AUTHOR: Dr. Cynthia Mwenja teaches Composition and

Rhetoric at the University of Montevallo.





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Energy Management for Private Universities

BY WILLIAM HENDRIX

Energy management is a critical issue for private universities as they aim to maintain a balance between energy consumption, cost control, and environmental sustainability. With the increasing cost of energy, the need for effective energy management in these institutions is more pressing than ever. Private universities can benefit significantly from energy management practices by reducing energy consumption, reducing costs, and improving their overall sustainability profile. Implementing an energy management plan can help institutions identify areas of energy waste, reduce energy consumption, improve energy efficiency, and ensure compliance with environmental regulations.

One of the first steps in effective energy management is to conduct an energy audit. This process involves a thorough analysis of the energy consumption patterns and practices of the university and can be done in-house or with the help of an external consultant. The audit should cover all energy-consuming systems and processes, including heating, ventilation, air conditioning (HVAC), lighting, power, and water. Once the energy audit is complete, the university should develop an energy management plan that outlines its energy consumption goals and objectives, along with the strategies it will employ to achieve these objectives. The plan should prioritize actions that have the greatest potential for energy savings and should include specific steps and timelines for implementation.

One of the key strategies for reducing energy consumption and improving energy efficiency is to upgrade HVAC systems, lighting systems, and other electrical systems to more energy-efficient models. For example, replacing old incandescent light bulbs and or florescent with LED lights can significantly reduce energy consumption, while upgrading HVAC systems can improve heating and cooling efficiency, reduce waste, and improve indoor air quality.

HVAC Processing and Upgraded Controls

HVAC optimization involves various approaches to improve energy efficiency and comfort in buildings.

Part 1 involves cleaning and protecting coil systems with ceramic coatings and integrating anti-oil fouling agents into the refrigerant side of the HVAC equipment. This combination improves heat transfer, prevents corrosion, and reduces the buildup of oil residue, leading to lower energy consumption and a longer lifespan of the system.

Part 2 involves upgrading controls by installing variable speed fan drives and utilizing software enhancements. Such upgrades result in reduced energy usage and improved indoor air quality.

Part 3 involves real-time HVAC monitoring through integration with building management systems (BMS). This integrated monitoring enhances visibility and control, allowing for quick detection and resolution of any issues, leading to reduced downtime and maintenance costs. By implementing these measures, HVAC systems can operate more efficiently, reducing energy costs and enhancing comfort for building occupants.

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Energy Reduction and Power Management Solutions

An effective energy strategy should include electrical power optimization at the main service panel or sub panels to minimize energy losses and increase the efficiency of equipment. Power factor correction should also be implemented to improve the power factor and reduce the reactive power demand. Power quality management is also crucial to ensure that electrical equipment is protected from voltage surges, harmonics, and other power quality issues. By incorporating these strategies, universities can achieve significant energy savings, improved equipment performance, and increased reliability of electrical systems. A robust energy strategy should also include ongoing monitoring and maintenance to sustain these benefits over time.

Water Conservation Strategy

Water conservation is essential for reducing costs and preserving the environment. A comprehensive approach includes three critical components:

Part 1: Upgrading fixtures such as toilets, showerheads, and faucets to more efficient models can significantly reduce water consumption and lower water bills.

Part 2: Installing a variable flow control device can eliminate water meter inaccuracies and excessive water consumption. This technology adjusts the water flow rate based on demand, resulting in significant water savings.

Part 3: Implementing a leak detection monitoring system can quickly identify and shut off any water leaks, preventing water waste and minimizing property damage.

By adopting these three strategies, universities can effectively conserve water, reduce costs, and protect the environment.

Finally, the university should monitor its energy consumption patterns and assess the impact of its energy management strategies. Energy management is a critical issue for private universities, and implementing an energy management plan can help institutions reduce energy consumption, reduce costs, and improve their overall sustainability profile. By conducting an energy assessment and developing an energy management plan, upgrading energy-consuming systems, promoting energysaving behavior, and monitoring energy consumption, private universities can take concrete steps to reduce their energy costs and improve their environmental footprint.

ABOUT THE AUTHOR: William Hendrix is president and CEO of Inspired TEC. William is responsible for developing strategies and solutions at Inspired TEC that improve health and wellness, improve facility performance, and lower operational costs. William and the team at Inspired TEC are passionate about solutions that improve sustainability and enhance corporate responsibility with a lower carbon footprint. Inspired TEC has been the leader in active air and surface purification technology for over two decades and now is a full spectrum facility solutions company.

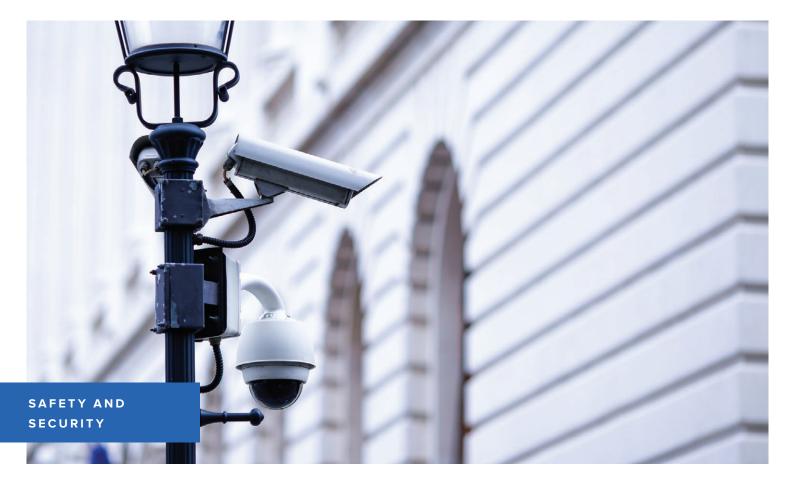


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Six Ways to Future-Proof a College's Security Investments

BY PAUL SMITH

Keeping students and faculty safe on college campuses is a top priority for every education administrator. Investing in security solutions such as access control, video surveillance, and analytics can provide peace of mind and help protect the campus. However, these investments often require substantial costs. This article discusses six tips for ensuring that school security investments remain relevant in the future.

Open Platforms

Systems that are based on proprietary technology rather than open platforms limit users in several areas, including choices of complementary software tools. By investing in an open platform, colleges and universities can create a tailor-made solution that makes sense for their current needs while also allowing them flexibility to expand or modify their system in the future.

The right video management system (VMS) is critical for successful campus-wide security.

It should have all the features necessary to give administrators and security personnel complete control over their surveillance system. This capability is especially important as new technologies emerge, such as facial recognition, which uses artificial intelligence (AI) algorithms that require high-performance computing capabilities.

Potential for Expansion and Scalability

Any security solution installed on a college campus today will likely need to expand in the future, whether it's a small-scale system or a large integrated network. A scalable solution allows administrators to invest in a product that will not run into limitations when their systems inevitably expand or otherwise evolve. Ensuring that the system can accommodate any changes, many of them unforeseen, will mitigate wasted investment and costly upgrades or replacements down the line.

Integrated Software Solutions

Integrating software solutions with existing systems can help extend the life of a system by providing more features and capabilities than were previously available. For example, integrating access control with video surveillance can provide real-time notifications when someone attempts unauthorized entry into a building or area on campus. This integration makes it easier to manage multiple technologies using one central system while also increasing overall security levels across campus.

Insight from Analytics

Analytics allow a video management system to send an alert when problems are identified; these problems can range from objects left behind to some kind of physical altercation. The proactive nature of analytics means that campus security can receive an alert, either in a central command center or on a mobile device, then address an issue quickly.

Accessibility

School personnel need to have uninterrupted, real-time access to their video management systems. Unfortunately, as camera technology improves, retrieving live video can become problematic due to bandwidth issues. For this reason, colleges and universities should invest in VMS solutions with built-in bandwidth-reducing features to mitigate the typical network issues inherent in viewing live video remotely. Additionally, being able to view

live and recorded video from any device such as a smartphone or tablet—allows security personnel to maintain oversight no matter where they are located on campus.

Tailored Storage Solutions

When investing in storage solutions for a VMS, decision-makers should choose one tailored specifically for the college's needs-whether that's localized onsite storage, a centralized shared network location, or cloud storage. Different storage solution options are a necessity given the variance that can occur from one college or university to the next. Network strength, prior investment in centralized technology, or a vision for a future based in the cloud are all considerations that may lead to one decision or the other.

Colleges and universities should consider these six tips when vetting VMS solutions to ensure that they are able to meet campus security needs both now and into the future.

Any security solution installed on a college campus today will likely need to expand in the future, whether it's a small-scale system or a large integrated network. A scalable solution allows administrators to invest in a product that will not run into limitations when their systems inevitably expand or otherwise evolve.





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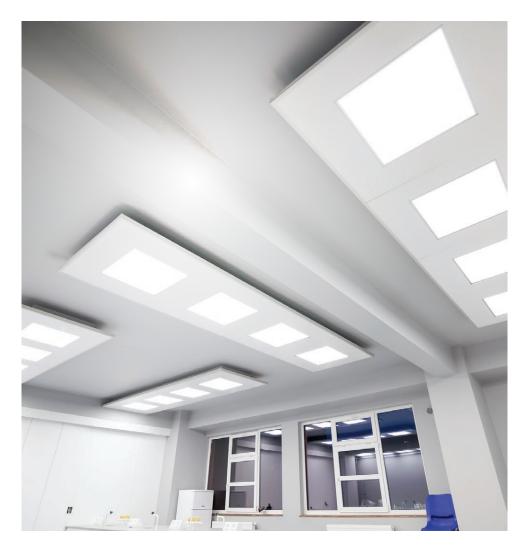


ENERGY STRATEGIES

BRINGING A MASTER PLAN TO LIFE

BY DAVID VINSON, PHD

A growing number of colleges and universities across the country are incorporating renewable energy, energy efficiency, and environmental stewardship into actionable plans. This shift in institutional values reflects strategies for addressing ongoing ecological concerns just as it serves the connectivity, reliability, and efficiency of campus operations that play a critical role in providing a competitive and ideal learning environment. Strategic plans are foundational in terms of reaching institutional goals, and certainly they play a vital role in determining and satisfying environmental initiatives.



strategic plan tailored towards sustainability and environmental stewardship demands that capital be raised. To do so requires a collective effort that is facilitated by the support of donors and the campus community. Local support, however, may not be enough. Many higher education institutions have had to get more creative about alternative sources of funding. For instance, power purchase agreements—covering solar, wind, or cogeneration—are a creative way of financing projects when access to capital is limited. Executing strategic plans also demand an extensive understanding of the campus' opportunities for growth in energy sufficiency. What follows are examples of how private universities are addressing these opportunities and meeting energy needs while improving environmental health.

The Duke University Energy Initiative

Despite its status as a heavily residential school, Duke University (Durham, North Carolina) recognized that nearly half of its environmental footprint derived from students commuting to and from campus. A task force was assembled; its objectives were to address sustainability and then articulate those visions within an overall plan. Following the plan's design, a plan for utilities was created. The two plans are separate, standalone documents. The utility plan determined the infrastructure and policies needed to build out the main plan in a sustainable manner. The Duke University Energy Initiative is one outcome of Duke's overall plan-a university-wide, interdisciplinary collaboration focused on advancing an accessible, affordable, reliable, and clean energy system. The Initiative extends across business, engineering, environment, law,

policy, and the arts and sciences to educate future energy innovators. Moreover, it sets out to develop innovative solutions through research and to improve energy decisions by engaging business and government leaders.

The Energy Initiative promotes a wide range of energy-related research across the university, from projects by individual investigators to activities that partner faculty, staff, and students with outside institutions, corporations, governments, and non-governmental organizations. Focal points for researchers at Duke include new energy materials and fuels; energy economics and modeling for improved energy policies; energy data analytics to inform energy production and use; and science and technologies that reduce the impact of energy on the environment. In fact, the Energy Initiative supports this research by providing seed funding for new investigations as well as access to other financial and human resources. The Initiative also sponsors workshops and seminars where research is shared, and it maintains a database of energy-focused faculty and staff that can be searched for collaborators and subject-matter experts.

Developing a Culture of Energy Solutions

The extensive support for research at Duke is but one aspect of the university's commitment to energy solutions. Its main campus has one of the largest utility networks in the Southeast, and the university manages heating, cooling, and electricity infrastructure for over twenty million square feet of buildings on campus. A significant portion of Duke's energy reduction has come from energy efficiency projects that range from LED lighting upgrades, HVAC scheduling, efficiency improvements in building mechanical systems, and district steam to hot water conversion. Phase One of Duke's energy efficient upgrades addressed LED lighting upgrades for fifteen buildings, generating a total lifetime cost savings of nearly \$700,000. In Phase Two, Duke completed LEED building upgrades and expects to save nearly \$350,000. Duke now has nearly fifty LEED-certified buildings that cover almost 5.3 million gross square feet (GSF), equivalent to 32% of the university's total GSF.

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In 2018, Duke developed the High Performance Building Framework, which was finalized the following year. The framework adopts a holistic view of green building by outlining an improved process for planning campus buildings, a rigorous sustainable design standard for all new buildings and major renovations, and a new tracking and rating system to determine how facilities perform following construction to ensure that buildings reduce energy and potable water use. Moreover, Duke will bolster its renewable energy capabilities via the purchase of 101 megawatts of solar capacity from three new solar facilities planned for North Carolina. New solar farms will be constructed and are expected to be operational before 2024.

Energy Efficiency Strategies at Emory University

Like Duke University, Emory University (Atlanta, Georgia) is at the forefront of

addressing energy efficiency and the increased use of renewable energy. With its newest strategic plan, 2025 Sustainability Vision, Emory has committed to reducing campus energy use per square foot by 50% and total energy use by 25%. The university has also committed to incorporating major building renovations into LEED silver commitment or higher; to adopting regenerative architectural standards such as net zero impact; and to reducing campus water consumption by 50%. Their goals are within reach, not least of all because of meticulous planning and turning ideas into action. In 2020, Emory began installing more than 15,000 solar panels across sixteen buildings on its Druid Hills campus, which will generate roughly 10% of its peak energy requirements while also reducing its greenhouse gas emissions by 4,300 metric tons. Since 2015, Emory has managed an overall energy use per square foot

(EUI) reduction of 15.3% and an overall total energy reduction of 14.1%.

Renewable energy is also on the rise at Emory. In 2021, the university's solar projects produced over 2,710 MWh of electricity, a 410% increase over the previous year. The Emory Student Center harnesses energy from solar panels to preheat potable water, and it uses a system of geothermal wells to aid in the heating and cooling of the facility. Emory is enrolled in the Department of Energy's Smart Lab Accelerator Program, which helps to advance strategies that improve energy efficiency in laboratory buildings. In fact, as recently as 2019, Emory was acknowledged for its outstanding participation in the program by surpassing the 5% reduction target with a 7.2% reduction in one lab building's energy use over two years. Emory's largest stationary source of energy use is that which is used to heat and cool its buildings. In response, Emory has implemented a temperature control policy for weekend, evening, and holiday building shutdowns. To further promote its campus-wide culture of energy solutions, the university also hosts an Energy Competition recognizing buildings that reduce the most energy throughout each month.

Strategy and Execution

Higher education in the U.S. accounts for over twenty million post-secondary students and about five billion square feet of floor-space. As civic, academic, and cultural stewards, institutions of higher education are in a unique position to transform lives and economies while safeguarding the planet. Strategic planning—and the execution of that planning—can make a profound difference both in the present and future. The examples of Duke University and Emory University are but two of many in which higher education institutions have demonstrated the desire and commitment needed to accomplish the work ahead.

ABOUT THE AUTHOR: Dr. David Vinson has a PhD in English with specializations in transatlantic literature and cultural studies.

He is a committed scholar, teacher, and dad. If you ever meet David, avoid the subject of soccer. His fandom borders on the truly obnoxious.

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Architects colleagues
worked with Theatre
Projects Consultants, Akustiks, R.C.
Matthews, and several members of Wenger
Corporation's engineering and design team
went to work on what would eventually become
The Fisher Center for the Performing Arts.

Lofty Goals

Belmont University is a private, four-year Christian university serving more than 8,700 students located just two miles from downtown Nashville, Tennessee. The school's College of Music and Performing Arts offers internationally recognized, nationally accredited programs in music, theatre and dance.

The Fisher Center is a 1,700-seat, multi-functional auditorium built to accommodate the school's dance, theatre, and musical performances, along with an array of

special events, including performances by the Nashville Ballet, Nashville Opera, traveling Broadway shows, and international artists. The specially engineered, horseshoe-shaped auditorium was modeled after traditional European opera houses, with ornate chandeliers, aqua-painted interior, tall domed ceilings, and world-class acoustics. However, completing it took an extraordinary amount of collaboration, communication, and planning.

The Star of the Show

The focus of the new center is a custom Diva® Acoustical Shell. "This is a highly customized one-of-a-kind shell, which was years in the making," explains Carrie Renchin, Project Manager. The main requirement for the shell was to match its decorative features to those in the room. Custom urethane shapes were applied to the front of the tower and ceiling panels to mimic the intricate design of the venue. The shapes required several iterations and model changes prior to final approval to

ensure the aesthetics would complement the space.

Engineers then made a full-size mockup of a tower and a portion of a ceiling row at the manufacturing facility. After some minor modifications, the shell design was approved for production. The shell has thirteen towers that are each twelve feet wide and forty feet tall. There are four onstage ceiling rows and one forestage reflector. The ceilings and forestage reflector incorporate a combination of Lieto™ LED White and RGBW light fixtures.

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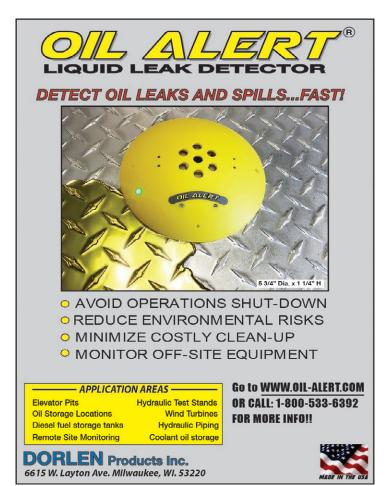
focusing. Now Belmont is able to keep the stage incredibly well-lit with a variety of options and add a pop of color for special events.

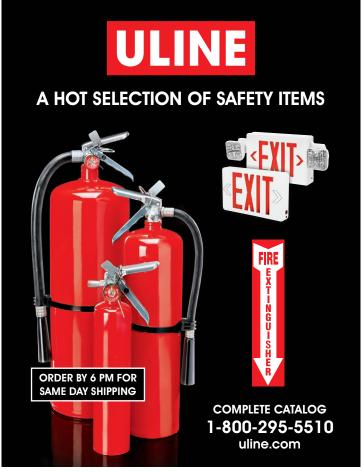
Creativity in Engineering

The first challenge engineers had to solve was how a forty-foot-tall tower would fit into a thirty-foot-tall storage area. They designed motorized sections that fold the top ten feet back so the shell can be stored when not in use.

The second challenge was the sheer weight of the towers. "The team reinforced the aluminum and steel structure to withstand the weight but made sure it was mobile enough to maneuver on stage," explained Kellie Cultice, Lead Project Engineer. In addition, extra weight meant regular castors would damage the floor. Cultice asked R.C. Matthews, the general contractor for the project, to send them flooring samples. Having these materials available allowed the team to experiment and settle on a final solution before sending the shell to Belmont. "Making it simple for the end-user was really important," offers Millie Dixon, Theatre Projects Director/Project Manager. "Wenger

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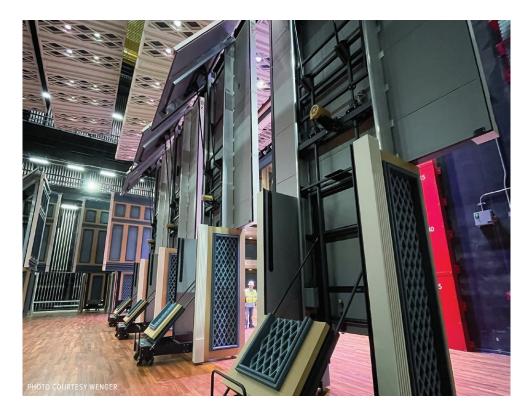
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really stepped up to the plate when it came to balancing those practical needs of height, weight, and functionality with all of the features that the architect wanted on the face of this shell. They did an outstanding job."

Fine Tuning

The Belmont shell was customized not only from an engineering perspective but from an acoustical one, too. Performances here range from professional orchestras to student choirs, to a variety of large and small ensembles, to any number of special events requiring a very versatile shell. "We start with the room," explains Russ Todd, Akustiks Principal and Managing Partner. "What we do in designing a multi-use hall is create a concert hall condition in a room that also has the ability to function as a theatre with a full fly tower. The way we do that is by designing an orchestra shell. The shell is an extension of the room, and it blends in perfectly."

Todd points out that the room needs to work for amplified music, too. Todd and his team also designed a sound-transparent ceiling as opposed to a plaster ceiling. This approach allows the sound to project up into the upper volume of the room for the orchestra or opera for a full, rich resonance. "But for the amplified mode, we bring in adjustable acoustics above the sound transparent ceiling to dampen that reverberation," he says.

Another custom element of the shell towers is a series of venting doors in the side wall towers. The venting allows for balancing sections of the orchestra. Or, if amplified sound is too intense, doors can be opened to allow some of the sound energy to escape. The shell is versatile, depending on the number of towers utilized for performances. The full shell occupies the full depth of the stage, which will accommodate a full orchestra plus a choir. The adjustability of the shell benefits ensembles of any size.

And finally, the shell is as intricately beautiful as it is complex. Many of the colors on the 3D faces of the shell match the paint in the interior of the room. The result is a multi-functional shell that produces excellent sound and blends perfectly into the rest of the room. "Having worked with Wenger, Theatre Projects, and ESa on many installations

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before, we've really grown as a team over time and advanced ideas and thoughts about how to create these halls," Todd says. "It's exciting when it comes together."

"This is a very specialized industry, and there aren't that many companies that actually design and build shells," Minnigan says. "Wenger is definitely the best, and we knew they had the capabilities to meet the requirements that this building and this shell would need to fulfill."

Ready to Roll

Named for retired Belmont President Dr. Bob Fisher, the Fisher Center for the Performing Arts was officially dedicated in a special ceremony. The first official performance in the hall was the filming of the annual "Christmas at Belmont" concert, a massive holiday spectacular featuring nearly 650 student musicians and vocalists that was broadcast nationally on PBS. Dr. Stephen Eaves, Belmont's Dean of the College of Music and Performing Arts, knew the students were ready. "This new space truly helps Belmont students reach for higher excellence in the arts," he says.

New Belmont President Dr. Greg Jones agrees. "The beauty and performance capabilities of The Fisher Center for the Performing Arts are simply unmatched, and its possibilities are unparalleled," he says. "This venue equips students with the confidence and real-world experiences that set them apart as Belmont graduates, while also attracting world-renowned artists to share their immense talents with our campus and the local community. With Belmont's rich tradition of creativity and imagination across our campus, the Fisher Center is now a place for those values to come to life through curating, producing and presenting stories and art that inspire."



ABOUT THE AUTHOR: Heidi Van Heel is a freelance writer and digital producer based in Minneapolis. Over her career, she's

had the privilege of working on a wide range of projects, from high-profile PBS primetime specials to the performing arts.

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WHY GYM USERS ARE DEMANDING MORE

BY RUBEN MEJIA

As 2023 gets underway, we're seeing an emerging theme that began during the pandemic. All across the country, people in all walks of life are becoming increasingly interested in strength workouts, whether on their own or in addition to traditional cardio. At SportsArt, we began seeing this trend take hold in the earliest days of the COVID-19 pandemic—once people realized that lockdowns would be longer than expected, they discovered that they could easily replace their in-person cardio workouts at home or outside. In fact, they were looking for reasons to get out of the house!

owever, people faced a much bigger challenge finding a substitution for the strength training that they found in their gyms. People are now returning to their pre-COVID routines and heading back to the gym for their workout regimens, but they're hanging onto the cardio-enhancing strength routines they developed alongside their running or cycling. That change is leading us to see a growing emphasis on strength training. These trends don't just apply to some workout spaces, either. We're seeing this shift toward strength training interest in university recreation centers, health clubs, multi-family housing





unit workout spaces, and beyond. From the casual exerciser getting into better shape to the committed athlete, strength workouts on dedicated strength equipment have become a staple.

The good news about this trend is that the continued integration of strength training is making people healthier, both physically and mentally. For instance, one 2020 study by Australian researchers published by the National Library of Medicine sought to determine the connection between regular physical activity and the prevention or treatment of depression. The study found that people who completed twice the recommended amount of physical activity were half as likely to have depression compared to those who were inactive, and that integrating strength training into an existing workout yielded even more positive results. "Our study advocates that combining strength training with aerobic activities like jogging or cycling is likely to be the best thing for your mental

health," researcher Jason Bennie said in an interview about the study. "If you added in one session of strength training a week, there was a decline in the prevalence of depression. It didn't really matter whether you did one versus three sessions—small to moderate increases are likely to be beneficial for improved mental health." Bennie told the interviewer that, at the time, the "vast majority of the population is doing no strength training," which he saw as an issue. "If you combine them both together," he said, "it's even better." Fortunately for all of us working toward supporting a healthier population, people are starting to take notice.

There's a reason some fitness experts refer to strength and resistance training as "the fountain of youth." This exercise modality doesn't just make people more fit; it helps train bodies and minds to perform at a higher level. This type of training helps maintain a healthy balance of hormones in the body. Those hormones, especially during stressful times, are greatly impactful to maintaining one's

cognitive abilities to focus and increase productivity. Strength and resistance training helps balance overall levels of cortisol, the hormone that balances stress. This balance is extremely important. Out-of-balance cortisol levels can decrease metabolism and increase inflammation in the body, decreasing a person's ability to focus and increasing the feeling known as brain fog. Cortisol touches every other system in the body, controlling blood-sugar levels, regulating blood pressure, affecting sleep quality, assisting in memory-making, and aiding in fetal health during pregnancy.

These widespread benefits help explain why this newfound focus on strength training has grown so rapidly among people in all walks of life. Students, for instance, are going through an extremely stressful part of their lives amid a renewed push for attention being paid to mental health. As they deal with school, interpersonal, work, and family stressors that are new to many of these young adults, strength training opportunities in recreation centers

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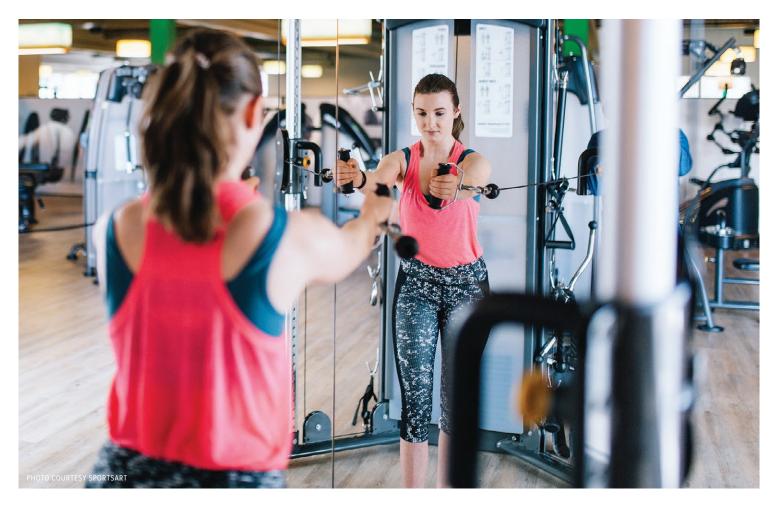
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represent a rare combination of mental and physical self-care. In a very real way, strength workouts are helping students become healthier while balancing their brains to take on the tasks of the day.

Similarly, strength training can provide benefits for busy parents. While cardio is still a beneficial workout, running or biking can take hours. But parents who may only have small amounts of time available can find just thirty to sixty minutes in their week to participate in strength training, they can improve mental focus, recharge their bodies, boost their metabolism, and even improve their mental health.

There was an era not too long ago when workouts were boiled down to a simple line of thinking: people can burn off calories from overeating with cardio workouts. Thankfully, people are moving on from the way we used to think of workouts. The thinking is no longer about "cardio burns calories"; instead, the focus is on a holistic approach to health and wellness. That approach necessitates adding strength into any balanced workout.

Although strength training is more popular and widely adopted than ever, people still hold the outdated notion that this type of exercise is exclusively for men or those who are already strong, particularly those who are young and fit. In fact, strength training is effective and beneficial for everyone, including those of all genders, ages, and physical abilities. A 2022 study led by Brigham Young University researchers showed that those who engaged in aerobic and muscle-strengthening physical activity lowered their mortality risk, even for older adults. The study's models controlled for age, sex, race-ethnicity, income, education, marital status, survey year, smoking status, body mass index, and chronic conditions, providing a broad and inclusive sample size. The results showed that even one single hour of exercise per week could make a difference in health outcomes.

Best-selling fitness author Stephen Perrine wrote about the benefits of strength training for older adults in an article for AARP last year. He pointed out that a 2021 review of sixteen studies from around the globe found that just thirty to sixty minutes a week of muscle-strengthening, or "resistance" exercise, increased life expectancy by 10-17%. Perrine wants older adults to know that

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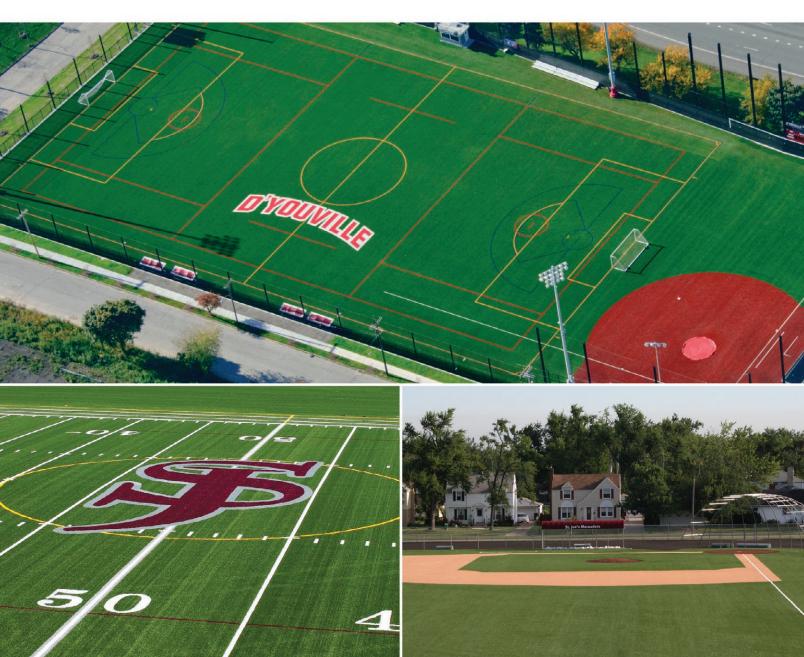
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strength training helps maintain brain health, reduce the risk of weight gain, keep blood pressure under control, decrease the risk of heart disease, avoid diabetes, battle cancer, and improve mood and happiness.

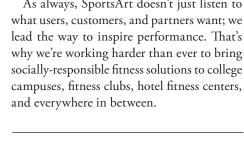
Helping to facilitate health and fitness for all ages and abilities is a key pillar of SportsArt's mission, and this focus is reflected in our offerings. A leader in sustainable gym equipment, we are dedicated to innovation with purpose and serving others before ourselves. We consistently create forwardthinking solutions that take into account what the fitness community wants, what they need,

and what we can offer to help them in that pursuit. Today, SportsArt offers more than eighty different models of strength equipment and nearly seventy different cardio models, and we develop rehabilitation equipment that allows differently-abled individuals to work out, as well. As trends emerge and evolve, we remain at the forefront with options that inspire performance for our customers, partners, and users.

For instance, we developed the E872 ICARE with the Madonna Rehabilitation Hospital to mimic the kinematic and electromyographic patterns of walking closer than any other product, creating a platform that can provide full-body weight support and motor guidance, along with a wheelchair ramp. We also offer treadmills with extended handrails and extra cushioning, a recumbent cycle with added flexibility for rehab variants, and an ergometer that helps seated, standing, or wheelchair users strengthen their upper bodies.

It's important to note that praising the benefits of strength training doesn't mean thinking negatively about cardio workouts. Of course those more traditional exercises are still crucial to health, and that's why SportsArt continues to make a variety of innovative cardio equipment. Right now, we're seeing fitness enthusiasts and health-minded individuals emphasize those workouts less. Continuing to offer cardio options, however, allows gym owners, recreation managers, and everyone in between to provide more options and support a more inclusive fitness environment.

As always, SportsArt doesn't just listen to





chief technology officer. In 2000, after four years of active deployment in the military, Mejia began working in the corporate IT and telecommunication fields for the U.S. Army, launching his career and interest in the technology industry as a whole. Prior to joining SportsArt, Mejia held executive roles within the technology and ecommerce spaces.



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Denison Again Named a Top-Producing Fulbright College

Five recent graduates helped to secure a prestigious designation: the fifth time in six years Denison has been named a Top Producer.

Rachel Jankowski ('22) learned to surmount academic and life challenges while at Denison. Those same skills have been helping her in Poland, where she is conducting environmental science research as a 2022-23 Fulbright student. Jankowski is one of five recent Denison graduates who were offered prestigious Fulbright U.S. Student grants for the 2022-2023 academic year—a total that once again secured Denison's place as a Fulbright Top Producing Institution. The program announced its list on Friday, February 10, 2023.

Other Denison award recipients who helped the college earn the designation are Hannah Gilson ('22), who is on an English teaching assistantship in Bulgaria; Cynthia Guerrero ('22), on an English teaching assistantship in Peru; Sarah Schubert ('21), on an English teaching assistantship in Mexico; and Michael Ball ('22), who was awarded an English teaching assistantship in Uzbekistan but declined to pursue this opportunity.

Funded by the U.S. Department of State's Bureau of Educational and Cultural Affairs, Fulbright grants build international bridges through education. Awardees spend a post-graduate academic year teaching English, conducting research, or studying at a university in one of over 140 participating countries. Fulbright grants are awarded based on academic and professional achievement, as well as applicants' records of service and leadership potential in their respective fields.

Denison prepares its students to thrive as Fulbright awardees through the college's rigorous academics, significant research and internship opportunities, and strong faculty mentorship philosophy, says Adam Davis, a history professor and the director of Denison's Lisska Center for Intellectual Engagement. "That Denison once again has been named



a top producer of Fulbright awards underscores what we already know—a Denison education equips its students with challenging and rewarding academic experiences, invaluable life skills, and the confidence and dexterity required to navigate an increasingly globalized and complex world," Davis says. "These Fulbright awards are a testament to our students' deep global engagement, intellectual curiosity, and commitment to building intercultural understanding."

Jankowski appreciated these benefits of her education at Denison. "I am really loving my Fulbright term in Poland," she says. "It is improving my worldview and my self-awareness. Almost everything is a challenge, but that is how I know I am growing and learning. My four years at Denison were similar in this regard—academically challenging—and I gained an appreciation

for active, holistic learning through struggle. Denison fostered my sense of curiosity, and my professors helped me build confidence. I am always developing these skills, but I use them every day while studying and living in Poland."

The Lisska Center for Intellectual Engagement provides advising and support for students as they prepare their applications for a wide range of international and domestic fellowships. The center is holding Fulbright information sessions on March 23 and 27. Interested students or recent alums can email the Center for information and to register. The Fulbright Program was created to increase mutual understanding between the people of the United States and other countries. Fulbright is the world's largest and most diverse international educational exchange program.

ABOUT DENISON UNIVERSITY: As one of the nation's leading liberal arts colleges, Denison University boasts generations of students who can attest to its effect on their lives. Each would cite a different reason. And they'd all be right because Denison's liberal arts tradition and residential community create a college of endless personal possibilities. www.denison.edu



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Jonathan Logan Family Foundation Gift to Spelman College Establishes New Center for Documentary Media Studies—the First at an HBCU

In December 2022, Spelman College announced a \$1 million gift from the Jonathan Logan Family Foundation to establish the Jonathan Logan Family Foundation Center for Documentary Media Studies in the new Mary Schmidt Campbell, Ph.D. Center for Innovation and the Arts. Spelman College is the first Historically Black College and University (HBCU) to offer a bachelor's degree in documentary filmmaking.

The Jonathan Logan Family Foundation supports organizations that advance social justice by empowering world-changing work in investigative journalism, documentary film, arts, and culture. The documentary film program and the motion capture room and corridor will bear the Foundation's name. "We are grateful to the Jonathan Logan Family Foundation for this generous contribution to Spelman College to establish the new Center for Documentary Media Studies, which will help deepen the intersection of the arts, technology, and entrepreneurship for our students," says Helene Gayle, M.D., MPH, president of Spelman College. "This support creates pathways for our professors and students to develop innovative and groundbreaking work through our liberal arts curriculum."

Support from the Jonathan Logan Family Foundation for the new film documentary program began during the pandemic with equipment purchases which allowed students to continue their studies remotely and without interruption. "Our gift to Spelman comes at a time when hearing new voices in the documentary field is more vital than ever. The talented women of Spelman College have insights to share and important stories to tell,

and documentary film is a powerful way to bring them to light," says Jonathan Logan, president and CEO of the Jonathan Logan Family Foundation. "We are also proud to honor Dr. Ayoka Chenzira, a blazing star, a brilliant professor, and a dear friend."

As a result of this gift, Spelman College will also name the Documentary Production Lab within the Center for Innovation and the Arts in honor of Dr. Ayoka Chenzira. "I am grateful to the Jonathan Logan Family Foundation, known for its commitment to storytelling from underrepresented communities and advocacy for social justice, for recognizing our program. The generous new gift will allow our students to be the next group of emerging Black women documentary filmmakers to produce their creative and bold ideas for films in a state-of-the-art facility," says Dr. Chenzira. "It is a surprise and an honor to have a production lab in the Mary Schmidt Campbell Center for Innovation and the Arts bear my name. I am forever grateful to the Foundation and Spelman College."

Dr. Chenzira is division chair for the Arts at Spelman, as well as the Diana King Endowed Professor in Film and Filmmaking, Television, and Related Media. She is an Emmy-nominated director and also received a nomination for an NAACP award for her work as a television director. Her distinctive work spans fiction, documentary, animation, performance, experimental, television, interactive films and theater. She is widely recognized as one of the first African American women to write, produce, and direct a 35mm feature film, "Alma's Rainbow," developed at Sundance Institute. Her collection of films recently received 4K restorations by the



Academy Film Archive, part of the Academy of Motion Picture Arts and Sciences, and The Film Foundation, with funding from the Hobson/Lucas Family Foundation.

Dr. Chenzira is also considered the first African American woman animator with her film, "Hair Piece," which was inducted into the National Film Registry at the Library of Congress. She is a member of the Directors Guild of America.

The Center for Innovation and the Arts, scheduled to open in the fall of 2024, will serve as a learning hub for entrepreneurs and innovators and will house Spelman's arts programs and Innovation Lab, giving students access to more cross-disciplinary learning opportunities. The 84,000 square-foot development will be home to cutting-edge collaborative programs, including The Arthur M. Blank Innovation Lab, co-curricular activities for the Center for Black Entrepreneurship, and a satellite gallery for the Spelman College Museum of Fine Art. The Center is the first new academic facility at Spelman in nearly twenty-five years.

ABOUT SPELMAN COLLEGE: Founded in 1881, Spelman College is a leading liberal arts college widely recognized as the global leader in the education of women of African descent. Located in Atlanta, the College's picturesque campus is home to 2,100 students. Spelman is the country's leading educator of Black women who complete PhDs in science, technology, engineering, and math (STEM). The College's status is confirmed by the U.S. News and World Report, which ranked Spelman No. 51 among all liberal arts colleges, No. 19 for undergraduate teaching, No. 5 for social mobility among liberal arts colleges, and No. 1 for the sixteenth year among historically Black colleges and universities. The Wall Street Journal has ranked the College No. 3, nationally, in terms of student satisfaction.

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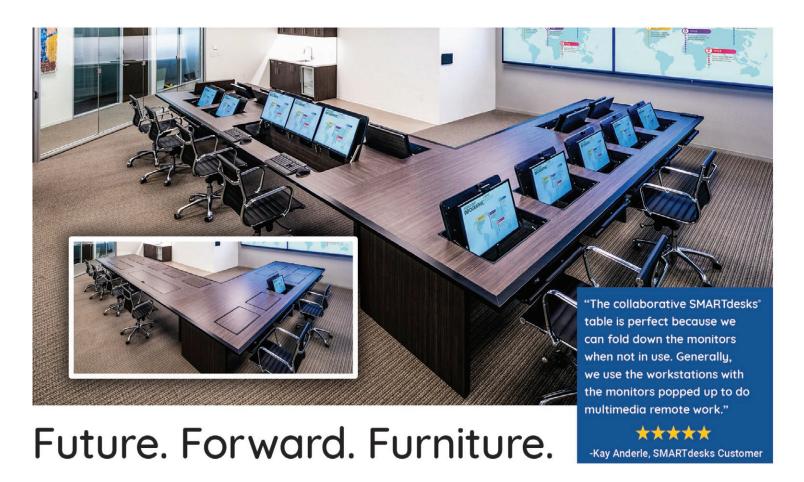
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