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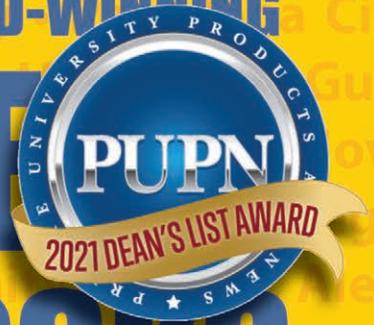
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Best Practices for Keeping Students Safe

Securing a college or university is a difficult task. It's a big responsibility that affects the lives of the entire population on campus. For the past several years, statistics show overall school campus crime is declining, yet crime is always a risk. Campuses need to remain vigilant and continue to look for the best solutions to protect students, staff, and visitors.



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St. Michael's College Addresses Soil Erosion, Biodiversity Loss, and the Climate Crisis

The rallying cries of environmentalism assail our ears with an overwhelming variety of concerns: deforestation, invasive species, wetland loss, the biodiversity crisis, and climate change. Barrages of negative headlines risk leaving a hopeless impression, but committed people are quietly making inroads, working toward steady change—and private universities can have important roles to play in addressing the multiple, interlocking crises that humanity currently faces.



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The 2021 Dean's List Award winners represent exceptional products in a variety of categories. The companies included among these winners offer continuing, long-term contributions to the mission of private colleges and universities that seek to provide the finest facilities and services to their students, staff, and faculty.



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SPOTLIGHT / ON OUR COVER

08 SPOOKY EVENINGS: A "BLUEPRINT FOR ENGAGED HUMANITIES"

Matthew Jarvis, Visiting Assistant Professor of Art History at Nebraska Wesleyan University, has built on his overlapping areas of interest—English, Theatre, Art, and horror—to co-create a variety of virtual and in-person projects, including a summer reading series, an innovative art show, and a month-long e-series of speakers, interviews, readings, and film screenings.



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EDITOR'S LETTER



Wow, here we are already into September, and I swear I just took down last year's Christmas tree. Funny thing, when my children were still at home, this would be the month that we would be talking about getting our four trees out to begin decorating for Christmas. I love Christmas and all that it represents and wanted to celebrate it as early and as long as possible.

We all have had interesting challenges this past year, and yet most of us are still here standing. I believe that now more than ever we need to spend our efforts in bringing joy to the people we are blessed to touch. A kind word and encouragement, a smile, and a helping hand to those who need it are some of the richest gifts we can give each other. I know the amazing feeling I got when someone I don't know at my local Costco—yes, I love that place—asked me if they could help me load up the pressure washer I was trying to get into my Jeep. I think we can all plan to share that feeling in our own small corners of the world.

As big Bill Murray fans, our family loves to watch the movie "Scrooged" every year during the holidays. In that movie, his character is given a look at his life: past, present, and future. I always think about what he says at the end of his experience: "It's Christmas Eve! It's... it's the one night of the year when we all act a little nicer, we... we... we smile a little easier, we... w-w-we... we... we cheer a little more. For a couple of hours out of the whole year, we are the people that we always hoped we would be!" What if we could extend that feeling and attitude beyond a couple of hours, once a year?

This goal—aiming to be our best selves for longer than a few hours on one day a year—is my wish for this Christmas season, which is celebrated in our house from September 1 to December 25. That time frame may be starting early for most of you, but let us all try to be the people we always hoped we would be during that span. Can you imagine how the campuses and local towns would feel? My experience has been that most of us have more than we know, reminding me of a scripture verse that I find myself in awe of every time I think on it: "and the greatest of these is love."

Thanks for reading and letting me just talk with you all this month. We appreciate being a small part of helping you accomplish your goals of providing the best education facilities worldwide, and we look forward to continuing to offer the information you have asked us to provide.

Happy Holiday Season—even if that wish comes a bit early for some of you this year!

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Spooky Evenings: A “Blueprint for Engaged Humanities”

by Cynthia Mwenja, PhD

Matthew Jarvis, Visiting Assistant Professor of Art History at Nebraska Wesleyan University, has built on his overlapping areas of interest—English, Theatre, Art, and horror—to co-create a variety of virtual and in-person projects, including a summer reading series, an innovative art show, and a month-long e-series of speakers, interviews, readings, and film screenings. Each of the projects—all of which have been developed since August 2020—extend their reach outside of academia to pull together diverse participants interacting around a central theme of horror.

Horror as Cultural Reflection

As Jarvis points out, “You can study anything through the lens of horror.” Kendall Phillips, co-director of the Lender Center for Social Justice at Syracuse University, agrees, adding that the study of horror can also reveal cultural preoccupations, exposing the reasons why particular types of horror become prominent at particular times. Juan Castaño-Márquez, assistant Professor of Digital Media in Nebraska Wesleyan’s Department of Art—and Jarvis’ collaborator—says that, in critically engaging with and analyzing horror films and movies, scholars can examine interesting cultural dynamics; these texts can provide ways to deal with social and political issues both visually and conceptually. Jarvis and Castaño-Márquez point out that the horror genre is expansive and often differs from many people’s pre-conceived ideas.

Having begun watching horror movies at the age of six and with a “deep, abiding love

for Halloween,” Jarvis says that horror movies did not disturb him when he watched them as a teen. He is now re-visiting that material critically, finalizing a book titled *Millennial Monstrosities: The Horrors of a 90s Kid*, which, he reports, “explores the nature of intersectionality not only from a personal perspective but also how themes in 90s horror—sexism / sexual assault, gender inequality, sexuality, inequality, and racism—foretold the culture we are now experiencing.” He points out that “Cultural nostalgia is currently moving the 1990s forward in popular culture after about two and a half decades of focus on the 1980s. This book is a timely examination of American culture in the 1990s.” The decade of 90s horror films is bookended by *Silence of the Lambs* at the beginning and *Scream* at the end, and Jarvis says that many of these films have not yet been examined in academic settings. Jarvis, however, goes further than academic examination limited to the 90s; he also clearly

ties concerns revealed in 90s horror books and films to pressing social issues of the present day.

Collaboration

When he joined the Nebraska Wesleyan faculty in fall of 2020, Jarvis met Castaño-Márquez, who says that he and Jarvis were “trying to figure out how to do programming and bring interesting speakers to the students” at the beginning of the Fall 2020 semester. With Covid restrictions in place, it was harder to bring people to school, but the situation opened opportunities for virtual forums. As their conversations continued, they created a vision for an e-conference—a virtual space to address social and cultural issues through the lens of horror. They also placed particular emphasis on diversity, aiming to ensure that more than 50% of the speakers were people of color, women, and/ or queer. The timing was breathtakingly tight—having met in August of 2020, the pair had only six weeks to create the show from



the ground up—fund a budget, secure speakers, locate a camera, develop a website, promote the event, learn how to stream live productions—everything. They each also concurrently taught full course loads.

For 2020's inaugural event, titled *Nights of Horror*, Jarvis and Castaño-Márquez had originally aimed for thirteen nights but ended up gaining enough interest to fill every night in October. Castaño-Márquez says that they “kept getting yesses from cool people, and then from major people.” To assemble presenters, Jarvis cold-called people whose work he knew well. Castaño-Márquez says that they “just didn’t have the time to feel daunted or intimidated or second guess” themselves. The pandemic worked in their favor; a large in-person gathering of top people across so many fields would be prohibitively expensive. But in a virtual setting and during the pandemic, people were willing to speak—at

no charge—for the love of horror. Jarvis and Castaño-Márquez were “blown away” by the response from potential presenters last year, with top scholars, artists, film makers, make-up artists, and more agreeing to participate. According to Jarvis, the most popular guest speaker in 2020 was S. T. Joshi, the foremost H. P. Lovecraft scholar in the world; his session had hundreds of live viewers.

Jarvis and Castaño-Márquez have received support for their project from their department chair, the Provost, and the Office of Diversity, Equity, and Inclusion. The University President introduced many of the 2020 speakers, and—as an entomologist by training—the *Wasp Woman* movie, too.

That inaugural event has led to other projects, as well, and each of the two collaborators fills the role most suited to their strengths. As a video artist, Castaño-Márquez focuses on all aspects of the

As Matthew Jarvis points out, “You can study anything through the lens of horror.” Kendall Phillips, co-director of the Lender Center for Social Justice at Syracuse University, agrees, adding that the study of horror can also reveal cultural preoccupations, exposing the reasons why particular types of horror become prominent at particular times.



Juan Castaño-Márquez, assistant Professor of Digital Media in Nebraska Wesleyan's Department of Art, Jarvis' collaborator.

media production side of their projects, such as organizing the program, producing and streaming the show, staging the set, and creating the graphic designs. Jarvis, as the horror scholar, does the research and preparation for the interviews. He conducts the interviews for all of the projects in his office, which the two have staged appropriately for the horror-themed events. In the area behind him, viewers can see a dimly-lit scene: a dark red curtain behind a skull, a jack-o-lantern, and a Frankenstein's monster mask on the left and a row of horror books to the right. Other elements of the scene are less obvious, such as a prosthetic leg from the 1920s and an old radio.

Spooky Evenings

This year's October event, *Spooky Evenings*, is a "multidisciplinary academic e-event that seeks to engage academics, students, and professionals in the field of horror," as the promotional information states. Interspersed with scholarly presentations are film screenings and interviews conducted by Jarvis. This year, the event runs from September 26 through October 31, with an extensive lineup



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to speak on this year’s supernaturally-oriented themes: subjects such as vampires, witches, ghosts, necromancy, voodoo, demons, the devil, and black magic. Presenters reflect the far-flung nature of the field and include religion scholars—such as Columbia’s Dr. Esther Hamori, who studies demonology—and professors in many

disciplines—such as Dr. Henry Ansgar Kelly, author of *Satan: A Biography*. Additionally, the event includes popular authors—such as Richard Chizmar, who has written in collaboration with Stephen King—and top film makers—such as Anna Biller, who directed *The Love Witch*. *Spooky Evenings* will host a few

movie screenings, including *The Love Witch*; additionally, Rachel Harrison, author of *Cackle*, will give an exclusive pre-sale reading one day before the book’s general release to the public.

Sunscream and Other Projects

After creating the successful and remarkable production of *Nights of Horror*, Jarvis and Castaño-Márquez have continued to develop related projects. *Sunscream*, their 2021 summer reading series for adults, includes interviews with twelve well-known horror fiction writers. As Phillips notes, “summer is not generally a time for academic work,” so this reading series—which “taps into an interesting mix of horror writers”—provides a fun way to stay connected to the genre between spring and fall terms.

Another collaborative project, *Posters that Go Bump in the Night*, is an art exhibition in conjunction with Mad Duck Posters that features thirty-five art prints based on classic horror movie posters. The show opened Friday, August 13 and will run through October 31. Jarvis and Castaño-Márquez have produced interviews with about ten artists involved in the show, and they are planning a book which will include the art along with the interviews.

They are also looking ahead to the 2022 *Spooky Evenings* program, organized around contemporary “Satanic panics,” as the basis for a future anthology. While Castaño-Márquez had lost interest in the horror genre after his teen years, he has found that being involved in the various projects he and Jarvis have co-created—and meeting all the people who have participated—has led him to be more interested in the genre, albeit from a more scholarly point of view.

Spooky Evenings as a Model

Even though a variety of pop-culture texts and productions provide the focus of the event, the emphasis is firmly academic, with a “critical goal of addressing diversity issues,” according to Jarvis. Phillips goes further, calling *Spooky Evenings* a “blueprint for engaged humanities.” As Phillips explains, the e-conference provides a model of “how to engage a wider audience and get them super-excited.”

Jarvis asked Phillips, who includes horror studies among his academic interests, to be a speaker for *Nights of Horror*. Phillips found the event to be an “amazing project” because it brought together many discrete populations who had not previously had a platform

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to address each other and discuss common ideas and interests. These groups include horror studies academics, film industry creators, fiction writers, and popular critics on blogs, podcasts, and social media. According to Phillips, each of these groups has committed fans and attendant fan cultures, but there had previously been no bridges between the various fandoms. *Nights of Horror*, now *Spooky Evenings*, has begun to create those ties.

Phillips sees the *Spooky Evenings* model created by Jarvis and Castaño-Márquez as easily transferrable to other areas of inquiry—for example, a similar event could bring together games studies scholars, game makers, gamers, and fans. The importance lies, Phillips says, in “creating a space for conversations.” So often, he points out, academics either study a popular culture artifact or bring in a popular speaker, but they do not have actual dialogues with people outside of the academy. By contrast, in Jarvis and Castaño-Márquez’s model, the stakeholders are listening to each other; as Phillips says, it provides a “brilliant example of curating different voices,” and he believes the 2020 event is already having an impact.

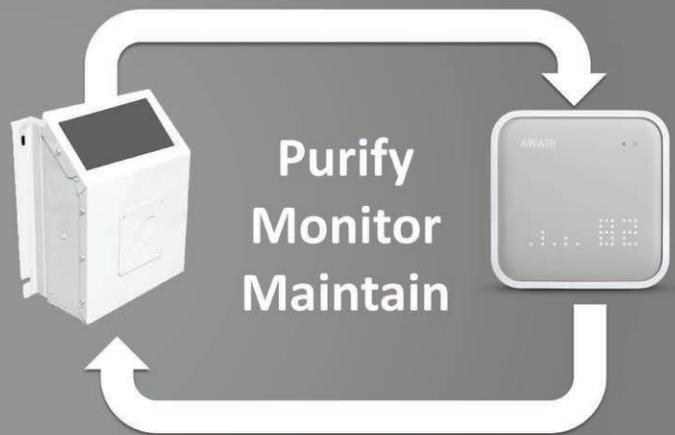


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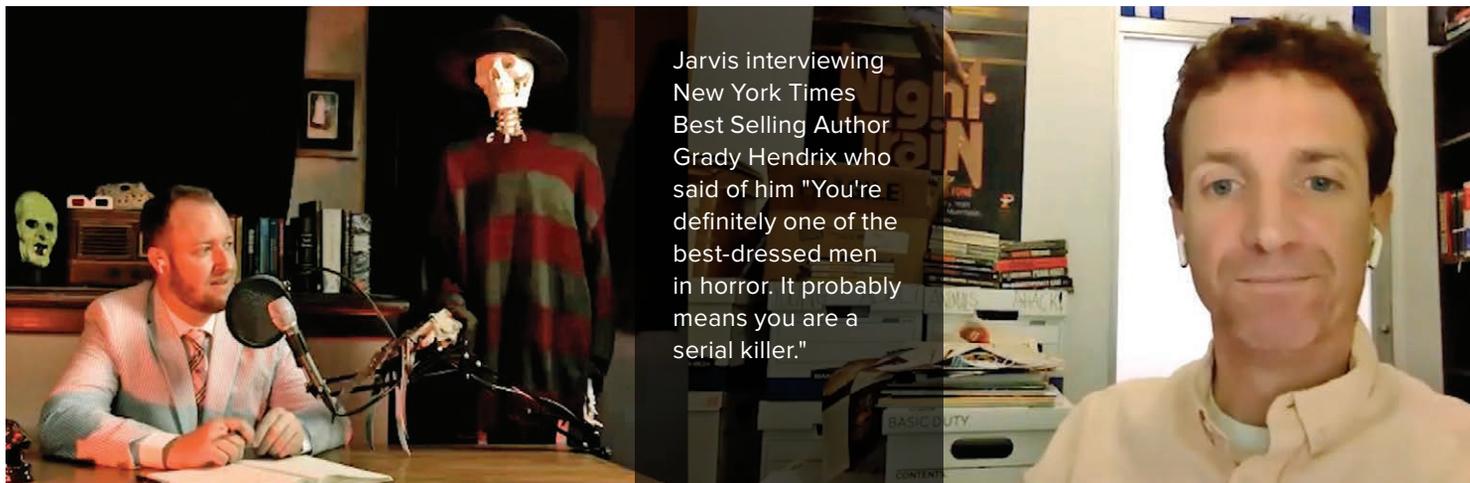
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Jarvis interviewing New York Times Best Selling Author Grady Hendrix who said of him "You're definitely one of the best-dressed men in horror. It probably means you are a serial killer."

For instance, Robin Means Coleman, author of *Horror Noire*—which inspired a documentary of the same name—was featured in *Nights of Horror*. Since that presentation, Phillips has seen that Coleman has been mentioned more in film blogs, with people discussing both her work and Black representation in the horror genre. Phillips credits Jarvis

and Castaño-Márquez with providing a space for “synergy” to flourish, “creating a forum for these conversations to expand.”

Join the Fun

According to Phillips, Jarvis and Castaño-Márquez have done “another impressive job” assembling this year’s “monumental project.”

Spooky Evenings can be followed on both *Instagram* and *Twitter* at @spookyevening (no “s” on the end), and the event will run live on *YouTube*’s subscription channel, *Spooky Evenings*. ■



ABOUT THE AUTHOR: Dr. Cynthia Mwenja teaches Composition and Rhetoric at the University of Montevallo.

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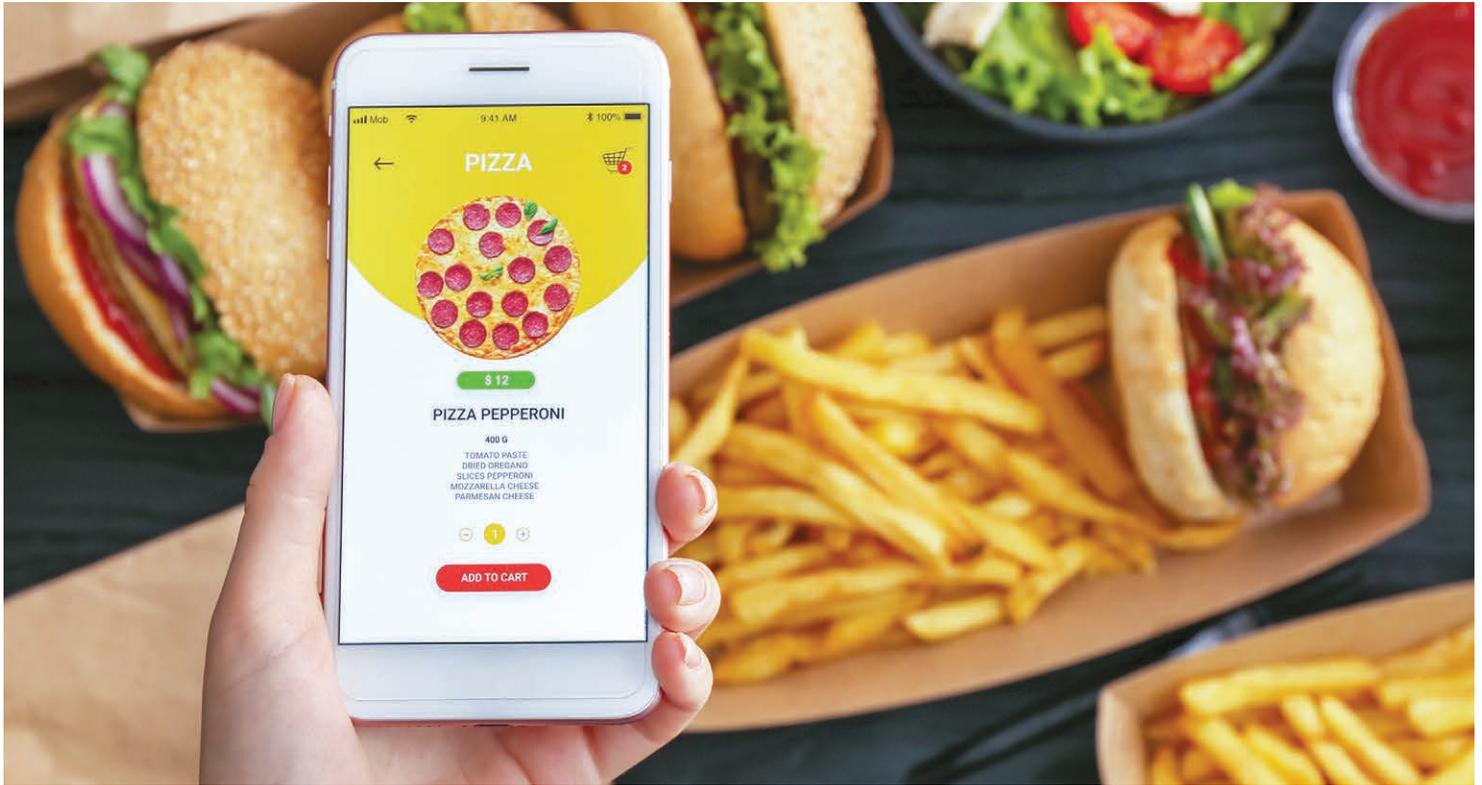
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ON-CAMPUS

Dining Halls Adapt and Innovate

by Lisa Gibbs

Going to “the caf” with friends has long been an important part of the college experience. Indeed, one characteristic of a healthy diet is eating with people, particularly friends and family. Family dinners or gathering for a cookout on Sunday with family and friends are universal ways to be in community with others. Private college and university administrators understand this important aspect of human culture and typically require meal plans so that students have meals in a communal space. However, changes brought about by the COVID-19 pandemic have greatly diminished the opportunity for such experiences.

The pandemic has also brought about the need to reconsider the overall campus dining experience. When the pandemic hit, the first adaptation was providing self-serve, pre-packaged meals, the closing of drink dispensers and water fountains, and delivering boxed meals to quarantined students. Since then, campus dining has made numerous adjustments to abide by safety protocols while also attempting to keep some sense of community. As campuses welcome students back in the fall of 2021, innovations in food delivery and food options are providing a different type of campus dining experience.

Food Delivery

Mobile apps that allow the user to order food and have it delivered are now commonplace. Companies such as Uber developed UberEats, and

other companies such as DoorDash and Waitr were developed specifically to offer food delivery services. Fast food and other restaurants also have apps for mobile ordering and delivery. Today’s students most likely have several food delivery or restaurant apps on their phones.

Campuses are utilizing the customization capacity of apps to offer a new dining experience for their students and are contracting with outside companies to deliver even better customer service. For example, Fresh Ideas Food Service Management provides innovative ways to order and deliver food. Fresh Ideas understands “the important role food plays in recruitment and retention” for higher education. Their dining services program is “positioned to support these initiatives through meaningful interaction and engagement between students and Fresh Ideas.” The company is committed to offering high quality fresh foods, using sustainable practices, and developing innovative technologies related to food production and delivery.

Westminster College in Fulton, MO partners with Fresh Ideas and offers a completely contactless option for meals at the Johnson College Inn (JCI) Snack Bar. Students can order food through the FreshX app. When their food is ready, a unique code is sent to their phone. This code gives access to a specific cubby in a Minnow Pod, a refrigerator-like set of ten insulated cubbies inside the JCI. This pod is portable

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Private college and university dining halls are also offering increased food options for students. More and more research supports the benefits of healthy, sustainable eating as well as the negative impact of mass food processing and food waste. Campuses are addressing these issues and expanding their menus to include plant-based and vegan foods, allergy-free foods, and dedicated preparation spaces.

and can be placed anywhere there is a power outlet. Interior lighting, customizable pick up times and ADA compliance give students security and flexibility. This system also reduces wait times for the students, helps with distancing protocols, and has resulted in increased sales for the campus dining system.

Robots are also being used by campuses for food delivery. Sodexo, a food service and facility management company, is partnering with robotic delivery startup Kiwibot to deliver food on campus. Loyola Marymount University and Gonzaga University are participating in early trials with the rovers. Students and faculty have the option of ordering fresh meals delivered by the insulated, Level-3 autonomous devices. The robots travel at a maximum two miles per hour, are equipped with high-tech sensors and are supported remotely to ensure safe operations.

As food delivery becomes less of a luxury and more of a solution, such innovations bring increased flexibility to campus dining.

Food Options

Private college and university dining halls are also offering increased food options for students. More and more research supports the benefits of healthy, sustainable eating as well as the negative impact of mass food processing and food waste. Campuses are addressing these issues and expanding their menus to include plant based and vegan foods, allergy-free foods and dedicated preparation spaces.

At Dillard University in New Orleans, Chef Dennis Dunn has slowly and consistently increased the health and wellness of students through food. Since he began working at Dillard, Chef Dunn has paid close attention to what the students wanted, such as food "from back home" and more variety. He began replacing frozen vegetables with fresh. He introduced vegetable étouffée and vegetable jambalaya, plant-based versions of two New Orleans classic dishes. Vegetable stock is made with kitchen scraps, such as apple cores and potato peels, which reduces food waste. A designated station in the dining

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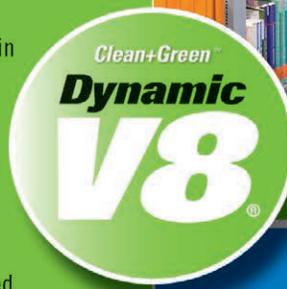
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hall gives students and faculty a variety of fresh meatless entrees, sauces, and savory blends. For Chef Dunn, good food means good for the body, and his approach has positively impacted the campus community.

In February 2020, Vanderbilt University in Nashville, Tennessee, announced it had become “the first U.S. university where all commercial on-campus kitchens are ‘Certified Free From’ tree nuts and peanuts,” the top two food allergens in the United States. Additionally, the university dedicated one dining hall certified free of other common food allergens. The Rand Dining Center is free from milk, eggs, fish, shellfish, wheat, and soybean, in addition to tree nuts and peanuts. Students can choose to dine in or use the mobile app orderIT, which has the additional benefit of recording and tracking foods consumed by students, particularly those with documented life-threatening allergies or medical dietary restrictions. These options are for everyone on campus, supporting the university goal to serve “a diverse student population with a broad spectrum of

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dietary needs and restrictions” and to offer “an inclusive dining experience for all students.”

Campus dining is constantly evolving and innovating to meet the needs of students. Cafeterias, food courts, and snack bars were already in place to offer a variety of food options as well as hours of operation. The pandemic accelerated the use of technology to provide contactless ordering and delivery of food. In addition, the move toward sustainability and the importance of student health has resulted in menu changes that include plant based and allergy-free options. These changes create a campus experience that supports the lifestyle, health, and wellness of the entire campus community. ■



ABOUT THE AUTHOR: PUPN staff writer

Lisa Gibbs earned her Ed.D. in Higher Education Administration in 2018. She is an advocate for arts, particularly dance, in education and for increasing the financial well-being of artists through financial education.




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BEST PRACTICES FOR

KEEPING STUDENTS SAFE

by Paul Hefty

Securing a college or university is a difficult task. It's a big responsibility that affects the lives of the entire population on campus. For the past several years, statistics show overall school campus crime is declining, yet crime is always a risk. Campuses need to remain vigilant and continue to look for the best solutions to protect students, staff, and visitors.

Where to Begin?

You've decided your campus needs a new security plan or an update to an existing one. Where do you begin? First, determine the security needs and expectations of the campus and decision-makers. Then tailor a plan with your preferred integrator to help keep your project on track.

Determine Needs and Expectations

Any project will go more smoothly when decision-makers agree on goals and scope. Talk with administrators and the IT group to determine needs, capabilities, and expectations. Include staff, security personnel, students, and parents to offer valuable insight. Consider reaching out to local first responders, too; they are another great source of information. Effort in the early stages could help save time and money throughout the project.

Tailor a Plan

With input from stakeholders, you're ready to think about equipment, budgets, and policies. Security is not sold as a "one-size-fits-all" plan. You'll likely be working with an integrator to

tailor a comprehensive plan designed specifically for your campus.

Indoor Risk Assessment

Building a comprehensive plan can be a major undertaking. It can include many stakeholders, such as representatives of campus security, police, administrators, faculty, staff, students, parents, local first responders, neighborhood residents, and nearby businesses. An outside security integrator who can bring a fresh view to the project often leads the effort. A good risk assessment is very comprehensive and involves a lot more than just checking the lights and rattling the doors. Expectations for students and staff members should be outlined in written policies and procedures. A risk assessment may take days to complete, but a thorough inspection can enhance security while saving costs. Considerations for this phase of assessment include the following:

Building Interiors

Security experts put an emphasis on entrances and how staff members control who gets inside. Doors, windows, and locks are checked to see

if they can resist an attack. Ventilation ducts are looked at to make sure criminals can't use them to get inside.

Stairwells, Hallways, and Restrooms

Common areas get inspected to make sure they aren't creating opportunities to hide weapons or contraband.

Security Systems

Access control, video surveillance, burglar alarms, and communications are checked to confirm they're working as expected.

Signage and Visuals

An inspector also looks for signage and other visual indicators to aid the hearing impaired during an emergency.

Outdoor Risk Assessment

Tools used to protect building interiors are different than those used to secure outdoor spaces. Emergency stations, low-light cameras, landscaping, and other equipment take on greater importance. This part of the assessment considers the following elements:



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Parking Lots and Garages

Parking lots, garages, and other exterior areas are examined to ensure they have adequate lighting, fencing, emergency stations, and security cameras.

Outdoor Facilities

A plan for monitoring athletic fields, walking trails, and other outbuildings should be developed, as these areas are frequent targets for illegal activity.

Surrounding Neighborhoods

Student housing, businesses, and traffic patterns are also considered in the overall strategy, since they can impact your security.

Annexes and Urban Campuses

The plan for dispersed campuses needs to include network-based security systems to bring information into a centralized security operations center.

Technologies to Consider

Once the initial assessment has been completed, the decision-makers can decide preventative security measures to put in place.



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Doors and Locks

Quality doors and locks are meant to effectively deter criminals from getting into buildings. The most effective security comes from the combination of a solid core wood or metal door plus an electromechanical lock. Unfortunately, glass doors are widely popular on campuses. If it's not possible to replace them, use weapon-resistant security film or stainless-steel screens on the glass. Additionally, electronic locks provide a high level of security. They integrate with access control and video intercoms so doors can be opened remotely. Staff members can use card readers and keypads to enter. Electronic locks eliminate the need for keys, which can be easily lost, stolen, or copied.

Access Control

Security experts agree that access control is a vital part of any campus security plan. Mobile credentialing is swiftly replacing badges. Security is enhanced as a person must have possession of a smartphone or tablet, a security code, or biometric confirmation to gain access. Biometrics such as fingerprints, iris scans, or facial recognition have become a new tool to authenticate students, staff, and campus visitors. There are no cards to lose or share, and enrollment in the system takes only a minute or two. Just like cards, time, day, and location restrictions can be added for each person. Campuses can combine card readers, keypads, and/or biometric readers for doors requiring absolute identity authentication.

Video Intercom

All campus doors should be locked, but visitors and volunteers need access to campus buildings. Video intercom systems are ideal in such situations. To properly control access into buildings, door stations are needed at the entrances. Depending on the system, you can select either master stations, guard stations, tenant stations, or mobile apps for visitor screening. Roaming guards and campus security can use mobile apps in lieu of a physical master or guard station. Tenant stations and mobile apps are perfect for dorms and student housing. A door station can be installed outside any entrance. When visitors push the call button, their faces and surrounding area are displayed on the inside station or mobile app. A two-way conversation begins, and if the visitor is approved, the door can be conveniently unlocked.

Visitor Management

The days of asking visitors to use pen-and-paper sign-in books are gone. Best practices now favor electronic visitor management systems (VMS). They're accurate, easy to operate, and

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Numerous studies have shown the presence of cameras is enough to deter many criminals. Simply put, criminals don't want to commit crimes when they know they are being watched. Today's cameras capture incredible detail. They provide round-the-clock, real-time views of campus buildings and outdoor areas.

enhance security. With these systems, visitors are asked to produce a government-issued photo ID which is swiped through a visitor management system. Within seconds, the person's information is checked against federal and state criminal databases and the national sex offender registry. A campus can also add its own custom watch lists. When properly implemented, watch lists provide protection from restraining orders, custodial issues, as well as providing the names of disgruntled former-employees and students. After the system clears a visitor, a temporary badge is printed with the person's name, picture, date/time, and area of campus approved to visit. Some badges automatically fade within a specific time frame to indicate the visitor's authorized time on campus has expired. Visitor information from multiple campus stations is stored in a central database and is easy to share with first responders during an investigation.

news and photos with our families and friends. Apps can also be a valuable security tool. Some stay connected to a network 24/7, allowing officers to remotely patrol the campus while remaining tethered to a security operations center. Staff can monitor video, receive immediate notifications, open doors to approved visitors, and much more. Campuses can now create apps providing direct communication links between students and security officers. Some apps let students or staff submit voice or video messages to report a potentially dangerous situation. Students can choose to share their location with friends and family while traveling across campus.

Cloud-Based Mobile Apps

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Video Surveillance

Numerous studies have shown the presence of cameras is enough to deter many criminals. Simply put, criminals don't want to commit crimes when they know they are being watched. Today's cameras capture incredible detail. They provide round-the-clock, real-time views of campus buildings and outdoor areas. They help prevent dangerous

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incidents and can limit the damage when events do occur. Video surveillance should cover building entries and perimeters, hallways, stairwells, cafeterias and commons, and libraries. Outdoor security cameras should monitor parking lots and garages, main campus thoroughfares, playgrounds, walking trails, and other remote areas.

Intrusion Alarms

Intrusion systems can protect people and valuable assets around the clock. Sensors create audible alarms when doors are forced open or windows are broken. Motion detectors sense people moving through buildings at night, during holidays, and weekends. Sensors can also protect HVAC and other campus equipment targeted by thieves.

Emergency Stations

A combination of highly visible towers, compact wall boxes, and emergency call stations offer distressed students an immediate way to call for help in remote areas.



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Crime Prevention Through Environmental Design (CPTED)

Lastly, CPTED can make a good plan even better and is one of the least expensive ways to enhance security on campus. Lighting is important along pathways, in parking lots, in garages, and surrounding building perimeters. It deters criminals while security gets a better view. Fencing and gates help guide people into proper entrances. Trees or bushes along the perimeter should be removed so they cannot be used to climb over fences. Landscaping should be trimmed to allow views of doors and windows from the street. Thorny bushes directly beneath ground-floor windows can help discourage criminals from climbing through windows. Clear signage is also important. Make sure signs have easy-to-read fonts, offer consistent messages, and are visible throughout the campus.

Choosing the best array of strategies and technology for your campus security needs can be a daunting task, but a comprehensive plan can be developed and implemented to protect all campus stakeholders. ■



ABOUT THE AUTHOR: Paul Hefty started in Technical

Support, building and modifying Aiphone intercoms. With his vast industry knowledge, he is now the manager of Technical Services and works closely with the Engineering and Sales Teams to help design new products for small-to-large scale applications.

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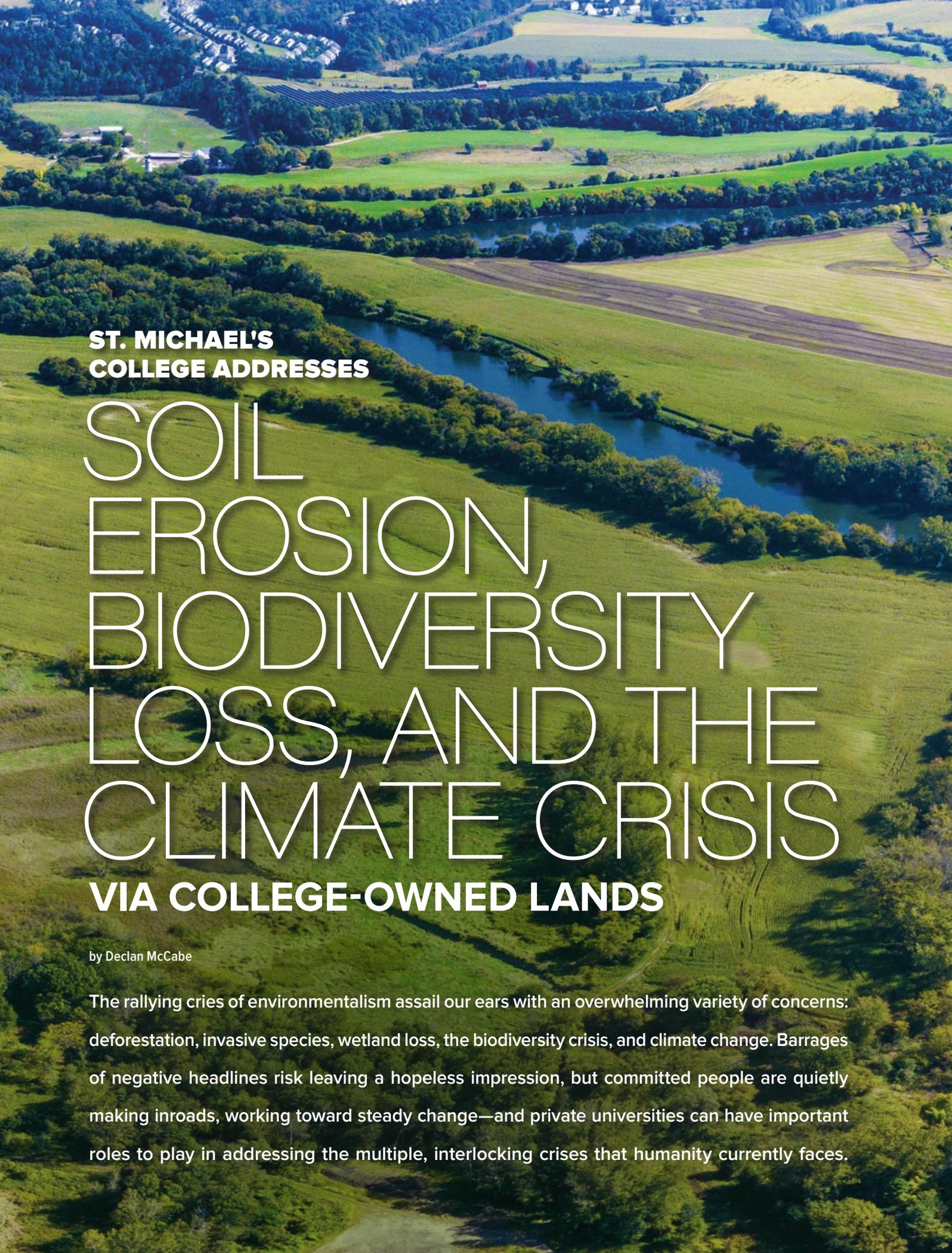


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CLIMATE CRISIS
VIA COLLEGE-OWNED LANDS

by Declan McCabe

The rallying cries of environmentalism assail our ears with an overwhelming variety of concerns: deforestation, invasive species, wetland loss, the biodiversity crisis, and climate change. Barrages of negative headlines risk leaving a hopeless impression, but committed people are quietly making inroads, working toward steady change—and private universities can have important roles to play in addressing the multiple, interlocking crises that humanity currently faces.





We use sheep instead of a lawn mower around our solar field.



In fall 2016, after the corn harvest, I crossed a field leased to a Vermont farmer by Saint Michael's College in Colchester, Vermont. My interest was in the woods beyond, where students had set trail cameras for research. With my lecture on soil erosion, eutrophication, and algal blooms fresh in my mind, I recognized the need to shift my focus to the ground beneath my feet, owned by my college, as I realized that my institution was, in fact, part of the problem.

Bare soil caked my boots. As the soil ran off the landscape in grey/brown rivulets, it graphically illustrated points just made in my course. With the corn harvested, nothing broke the pummeling impacts of rainfall; phosphorous-enriched soil continually washed towards the Winooski River before contributing to future beach closings downstream in Lake Champlain.

I found my mind reeling with multiple questions: What message was my academic institution conveying—one lesson for the classroom, another on the ground? Something needed to be done, but what? Our small college, governed by trustees with fiduciary responsibilities—in a time of shrinking student demographics region-wide—was likely making the best economic use of the land.

I had—literally—stumbled onto the intersection of environmental idealism and the bottom line. The unstated other side of every not-for-profit organization's coin is “not for loss.” Whatever solution I might propose would have to be revenue neutral. Terminating farming leases would forgo annual revenue, and site restoration would be costly. But many institutions use their lands for research and education, so I thought—why not us?

I contacted colleagues for creative solutions to my dilemma. Before long, I found my way to Jim Eikenberry, a representative of the Natural Resource Conservation Service. Jim forwarded documents describing Wetland Reserve Easements, a component of the U.S. Department of Agriculture's Agricultural Conservation Easement Program.

For qualifying land areas, the federal government would purchase development rights, come onsite, restore lost wetlands, and work to manage invasive species. The research and educational opportunities provided by environmental restoration right on campus would be phenomenal. To qualify for the program, land

must be agricultural and must include historical wetland. Aerial photographs dating back decades confirmed what was made obvious by the corn stalks: the property had been agricultural land for many decades. Soil conservation maps indicated wetland conditions, but a site visit was necessary for confirmation of that requirement.

In spring 2017, I met with representatives of federal and state agencies to walk the site. We were joined by Karen Talentino, then the college's VP for Academic Affairs, who is also a biologist by training. Soil cores were taken and inspected, and notes were made regarding site hydrology and trees characteristic of wetlands. We covered several miles that day, but we saw from the first steps that our farmed land included wetland, floodplain, and riparian zones worthy of protection. Moreover, because of our floodplain location, little of the land could be developed to begin with; loss of development rights would have negligible impact.

When we learned that an easement payment could financially replace one hundred and fifty years of agricultural leases, we had a strong case to make. Rob Robinson, our college's chief financial officer, did his due diligence, weighing the legal fees and property value loss that a perpetual easement would incur, and agreed that an easement made financial sense. We brought a proposal before our board of trustees, and they approved. In 2018, the Saint Michael's College Natural Area was created on 350 acres of campus land to support the educational, research, recreational, and athletic missions of the college.

We informed our tenant farmer that the lease on 65 farmed acres would not be renewed. He requested a year to plan for loss of acreage, and we agreed. In return, he planted cover crop to reduce soil erosion and increase organic content of the soil depleted by decades of extractive agriculture. After the last corn harvest in 2018, he planted winter rye, using a seed drill to better preserve self-seeded silver maples, willows, and box elders already coming up between the corn rows.

The Natural Area site is traversed by a right of way that is brush hogged annually by the Champlain Water District at no cost to the college. We decided that this right of way would be our first trail, extending 1.3 miles. The college carpenters installed trailhead kiosks, and Professor Richard Kujawa, our geographer, mapped what has since grown to be a four-mile trail network used by nature lovers, cross-country



skiers, athletic teams, and students—some enrolled in one of the fifteen different courses interacting with the area, and some simply out for a stroll between classes.

The signs attracted birders who promptly declared the area a “birding hot spot.” As of August 2021, they have logged 810 complete checklists on the site, documenting 171 bird species. Our students use the bird data in our Community Ecology course. Other naturalists document plants, insects, and mammals on the iNaturalist site, totaling 557 species reported to date. Jim Andrews, a herpetologist, visited in March 2021 to begin documenting amphibians and reptiles. Student researchers installed trail cameras and have photographed nineteen mammal species ranging from flying squirrels to fishers; students in Environmental Science measure organic content of the soil, comparing the site to the college’s nearby farm.

In a breathtakingly short period of time, this site has been converted from a neglected pollution source to a valuable campus resource. In 2019, we hosted Nancy Winship Milliken’s art installation consisting of clay bricks molded to convey snippets of “Dispatch from Gaia” by (then) Vermont Poet Laureate Chard deNiord.

Community members walked a mile of trail to take in the entire exhibit; I can’t think of a better embodiment of the liberal arts.

Nancy’s bricks, crafted from local clay, were designed to dissolve into the landscape, emulating the Leave No Trace ethic. Vermont’s weather has certainly made the bricks one with the earth, and the pandemic has provided ample time for Saint Michael’s College student artists to create their own outdoor exhibits following the same ethical principles. In fact, the pandemic has greatly increased artistic and other uses of the open-air site.

Conversion of the Saint Michael’s College land for new uses is a textbook example of win-win environmentalism. We have reduced soil erosion, improved habitat for native species, and increased tree density—and therefore carbon capture. The second win is the creation of a facility that serves the college mission and broader community in diverse ways. One of those ways was a valuable learning experience when our Green Up student organization joined Professor Trevien Stanger to plant 100 trees and 200 shrubs in the easement, which in turn will feed back into the environmental mission of the site.

The tree planting was made possible by a small grant from Green Mountain Audubon. This organization recognized the work that the college was doing in the Natural Area and encouraged us to apply for funds. One of our Saint Michael’s College alumni works with a different organization called Branch Out Burlington, and they have donated a significant number of sycamore and other trees which have also been planted.

Vermont is just at the northern edge of the natural range for sycamores, but with a changing climate, these trees will thrive here during a lifespan that is counted in hundreds of years. Planting trees just a little farther north than they would typically grow is sometimes called “assisted migration.” The simple idea is to plan for a warmer climate by planting trees that might not manage to cast their seeds so far north; this practice is another important lesson for college students.

Clearly, the Saint Michael’s College Natural Area is one of a great number of private university properties that, if appropriately stewarded, would collectively make significant contributions to increasing biological diversity, controlling soil erosion, and capturing carbon. While St. Michael’s has been able to build on the

opportunity afforded by the easement by pursuing other grants and partnerships, easements are not the solution for every property. Private universities can, however, improve habitats and lower our collective environmental impacts in other ways. Perhaps the lowest cost “action” one can take is to simply stop doing something. Many institutions invest significant time and energy in lawns that are, in many cases, unused. At Saint Michael’s College, we designated some of these lawns as “no-mow zones.” Because of slope and rough ground, the designated areas were difficult to mow to begin with.

This initiative was spearheaded by a colleague in our Fine Art Department. Professor Brian Collier, an artist and curator at the college, describes his “Unlawning America” project as “a call to inaction.” According to Collier, people in the United States devote about four times as much space to mowed lawn as we do to corn: approximately 40 million acres. A quick glance around your campus may well reveal some of that acreage maintained at a substantial cost to your institution. Collier suggests reducing this ecological desert by simply stopping the mowing on land not actively used for recreational purposes.



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Even without replanting, biological diversity builds rapidly in former lawns. Chicory, milkweed, and goldenrod are among the many plants that grow and feed pollinators in the no-mow zones at Saint Michael's. When our students collected leaf litter insects, the diversity was quite high compared to lawn.

Even without replanting, biological diversity builds rapidly in former lawns. Chicory, milkweed, and goldenrod are among the many plants that grow and feed pollinators in the no-mow zones at Saint Michael's. When our students collected leaf litter insects, the diversity was quite high compared to lawn.

Eliminating mowing has the added benefits of reducing the cost, carbon output, and noise pollution of mowing. In 2019, the average household spent \$503 on lawn care and maintenance; by extrapolation, many organizations and institutions spend far more on their larger lawns. At my own home, I have replaced a substantial patch of lawn with a vegetable garden, and I have been gradually expanding flower beds to replace other parts of it. I have added native shrub species, including elderberry, viburnum, and beach plum, that produce both flowers for pollinators and fruit for consumption—or for the birds I enjoy watching. Native species offer the advantage of pest resistance and require less upkeep. Natural areas—whether “no mow” parcels or larger expanses set aside through easements—can revert to their native diversity and lushness with remarkable ease. This year,

when I crossed the former corn field with my new collaborator Jim Eikenberry, we found ourselves looking up at self-seeded cottonwood saplings fully twelve feet tall. The site now accumulates soil as the stems slow flood water velocity and promote settling of sediments eroded from upstream. We discussed the best locations for college students to plant trees, and we identified other, more remote, locations where his agency will plant. Still other areas of former corn field will never be planted because trees are growing naturally at densities higher than either NRCS or Saint Michael's College could afford to plant. As our Natural Area reverts from cornfield to floodplain forest, we sincerely hope that this site can inspire all private colleges and universities to restore and protect their local environments in perpetuity. ■



ABOUT THE AUTHOR: Declan McCabe is an aquatic ecologist specializing on macroinvertebrate communities in freshwater habitats. He is a professor of biology and the Saint Michael's College Natural Area Coordinator.

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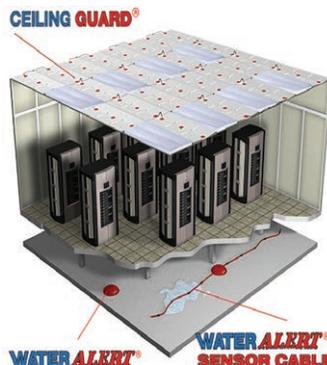
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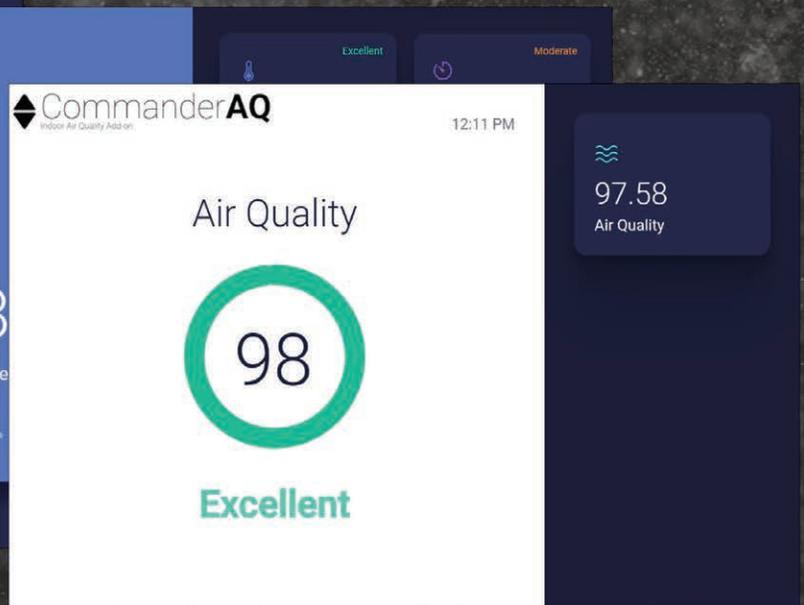
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Tulane Researchers Design Nanotechnology Blood Test to Find Hidden COVID-19 Infections

by Keith Brannon

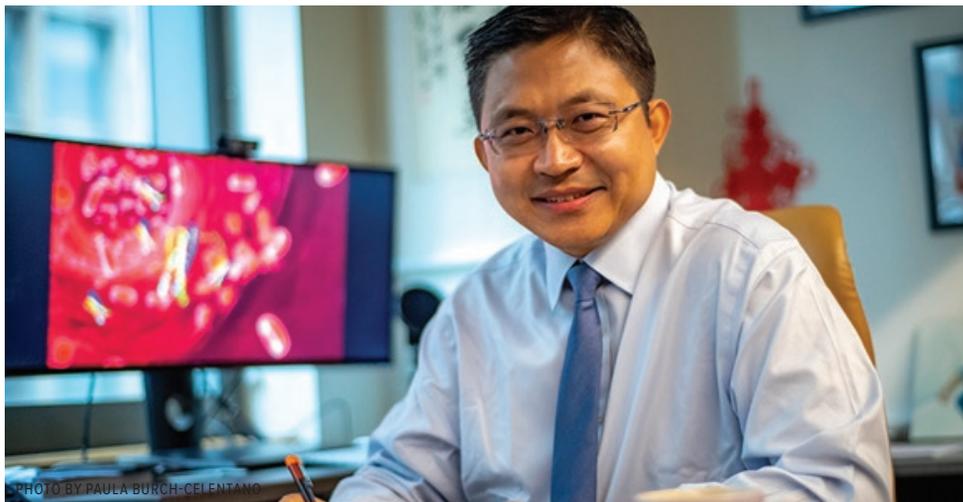
Nasal swab PCR tests are the gold standard for diagnosing COVID-19, but sometimes these tests miss cases when patients are swabbed later in the course of their infection as viral levels decline in the upper respiratory tract yet remain in the lungs, gut, or other parts of the body.

Tulane University researchers have developed a new type of blood test to find these hidden infections using nanoparticles to detect fragments of the virus released by infected cells anywhere in the body. Because the test uses a screening target that remains stable in the blood, it can detect COVID-19 weeks after initial infection, according to a new study published in the journal *Nature Nanotechnology*.

The test analyzes small lipid-enclosed bubbles of cell material called extracellular vesicles (EVs). These vesicles accumulate in the blood and protect their contents from being destroyed by enzymes. Cells infected by SARS-CoV-2 secrete EVs that contain RNA from the virus. Researchers captured these EVs using an antibody and then fused them with synthetic lipid vesicles loaded with a testing reagent. The blood test uses reverse transcription PCR to amplify the RNA target region and CRISPR to amplify the signal produced by this target to detect an infection.

“We believe the major utility of our approach is its ability to detect plasma EV-derived SARS-CoV-2 RNA as an early and durable sign of systemic infection,” said lead study author Tony Hu, PhD, Weatherhead Presidential Chair in Biotechnology Innovation at Tulane University School of Medicine.

Hu’s lab team compared the new test with standard nasal swab PCR tests in controlled infection models using non-human primates.



Tony Hu, PhD, Weatherhead Presidential Chair in Biotechnology Innovation.

Viral levels in the upper respiratory tract caught by nasal PCR tests tended to peak between days one and thirteen post-infection and decreased rapidly after peak expression. The blood test found lower extracellular vesicle viral RNA levels early in infection, but these consistently increased after day six and remained stable a month after infection.

The EV test was able to detect SARS-COV-2 RNA in blood samples from hospitalized adults who had one or more negative nasal swab tests but who were ultimately diagnosed with COVID-19. It also detected positive results in children who had multiple negative nasal swab PCR test results or a single positive test followed by multiple negative results.

The technology could give doctors a secondary screening tool for suspected COVID-19 cases that are negative via traditional PCR testing, Hu said.

“It may be particularly valuable for individuals with long-term evidence of infection where transient upper respiratory tract PCR results may not reflect virus levels circulating elsewhere in the body,” Hu said. “This includes individuals with compromised immune systems, such as transplant recipients and others receiving immunosuppressive therapies. It may also be relevant during organ donation to reduce the risk of virus transfer.”

The study was co-authored by Bo Ning, Zhen Huang, Brady M. Youngquist, John W. Scott, Alex Niu, Christine M. Bojanowski, Kevin J. Zvezdaryk, Nakhle S. Saba, Jia Fan, Xiao-Ming Yin, Christopher J. Lyon, and Chen-zhong Li of Tulane University School of Medicine; Chad Roy of the Tulane National Primate Research Center and Jing Cao of the University of Texas Southwestern Medical Center.

Howard University Students and Raising A Village Foundation Work to Close DC’s Learning Gap

by Aaliyah Butler

Howard University Center of Career and Professional Success has partnered with Raising A Village Foundation for the upcoming school year in a collective effort to increase participation in student mentoring and tutoring.

The Center of Career and Professional Success provides career services through experiential learning and campus employment. As part of this federal work-study partnership, Howard University students will be afforded the opportunity to work with the Raising A Village Foundation’s Driven 2 Succeed program as Driven Student Guides and mentors. This experience gives them direct access to empower

young scholars in D.C.’s underserved communities. Raising A Village’s goal for the school year is to ensure more than 1,000 District of Columbia Public Schools students receive quality, high-impact tutoring.

“Distance learning has significantly affected learning outcomes for so many students from underrepresented communities in the education system,” said Melissa Knight, interm director of the Howard University Center of Career and Professional Success. “We are excited that our federal work-study program will help bring these students back on track with their educational goals.”

This Fall, Raising A Village will facilitate an in-person tutoring model that has expanded to

twelve sites across Washington, D.C. Howard University federal work-study students have the opportunity to make an impact by serving as guides and increasing access to academic interventions for D.C. Public School students.

“As an HBCU alumna, the opportunity to partner with other HBCUs like Howard University brings me joy because we can give students the ability to use their experiences and education to become difference-makers in children and families’ lives every day,” said Raising A Village Founder & CEO Jaleesa Hall.

Vielka Vasquez, a sophomore psychology major, said she’s learned that adults can really impact the lives of a child and the importance for uplifting children.

Knight Foundation, Columbia University Launch First Amendment Institute, \$60 Million Project to Promote Free Expression in the Digital Age

The John S. and James L. Knight Foundation and Columbia University have announced the creation of the Knight First Amendment Institute at Columbia University. The \$60 million effort will seek to preserve and expand First Amendment rights in the digital age through research and education and by supporting litigation in favor of protecting freedom of expression and the press.

News organizations have a long history of championing First Amendment rights, helping to shape and clarify laws on privacy, information access, libel, and press freedom. In the past decade, however, economic pressures on traditional news companies have put a strain on their capacity to fight for these rights. Filling this critical void, the institute will be a primary, durable, and influential advocate of free expression in the digital age.

“The First Amendment is not self-executing; only people can make it what it has become, through our attitudes, actions and, more pointedly, through the courts,” said Lee C. Bollinger, president of Columbia University. “In the past, news organizations pursued and won key court cases defining free expression. But such cases can be enormously expensive and many media—both established and new—are increasingly hard-pressed in the current economic environment to support First Amendment legal action. While the digital age has opened up new opportunities for accountability journalism, we need to fill the void and continue to champion free expression through litigation, research, and education.”

A recent Knight Foundation poll of leading newsroom editors revealed that they believe the news industry is less able to pursue legal cases around free speech and freedom of the press issues than it was ten years ago, with most also agreeing that First Amendment law has not kept pace with new digital-age demands.

“The basic freedoms we take for granted under the First Amendment are hardly settled,” said Alberto Ibarguen, president of Knight Foundation. “As the internet becomes even more integral to our lives, we face significant questions about the evolution of our rights. Threats to free speech are on the rise, and our hope is that the Institute will not just protect but help reinvigorate First Amendment principles for future generations.”

Knight Foundation and Columbia University will contribute \$5 million each in operating

funds and \$25 million each in endowment funds to the institute, an independent 501(c)(3) nonprofit organization. It will be affiliated with Columbia, benefitting from the University’s top-tier law school, journalism school, and other relevant academic fields. President Bollinger is a noted First Amendment scholar who has made freedom of expression and the future of journalism core priorities in Columbia’s academic and civic mission.

In recent years the University has, for example, launched Columbia Global Freedom of Expression to support and promote international legal norms protecting an independent free press, Columbia Global Reports to publish long-form journalism on under-reported global issues and, at the Columbia Journalism School, the Tow Center for Digital Journalism and the Brown Institute for Media Innovation in partnership with Stanford Engineering to develop and teach new methods of online and data-driven story-telling.

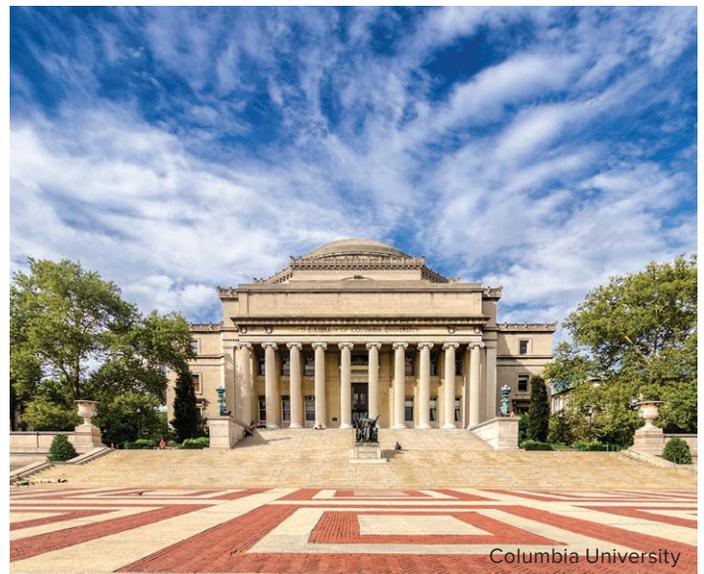
Jameel Jaffer, former ACLU deputy legal director, will direct the Institute.

Over the past two decades, Knight Foundation has invested \$18 million to help build the Columbia Graduate School of Journalism. The total Knight Foundation investment in the Knight Institute at Columbia, \$30 million, is the largest journalism grant in Knight’s history, and brings to more than \$100 million the amount the foundation has invested in the principles outlined in the First Amendment, including support for the Newseum, Yale Law School, and organizations supporting free press rights both inside and outside of the United States.

The Institute launches amid emerging First Amendment concerns on such topics as: National Security Agency electronic surveillance of journalists and news sources; privacy rights on digital platforms; the overall freedom of internet platforms; use of digital technology in courtrooms and access to court records; free speech on college campuses; the lack of a strong constitutional shield for journalists reporting sensitive topics; a crackdown on government employees who talk with the media; and government delays and refusals in handling FOIA requests. The main activities of the Knight First Amendment

Institute at Columbia University will be in the areas of litigation, research, and education. The institute will watch for court cases that offer an opportunity to define First Amendment law in the digital age, with a goal of achieving significant victories, and priority given to cases with digital components. Through its research, fellowships, publications, lectures, and other events, the institute will seek to help the legal community, including the nation’s network of legal clinics, understand the principles underlying the First Amendment and how they apply to new technology.

“Digital journalism has created exciting, unprecedented opportunities for how we report and receive the news. Today’s reporters and news outlets have access to innovative platforms, fresh perspectives, and a level of immediacy like never before. But it is also creating First Amendment



challenges,” said Jennifer Preston, Knight Foundation’s vice president for Journalism. “Without sustained advocacy dedicated to defending uninhibited expression and a free press, we are at risk of experiencing a steady erosion of these bedrock freedoms. This is a precarious moment for the First Amendment, and with this Institute we hope to establish a primary, permanent, influential advocate of free expression.”

About the John S. and James L. Knight Foundation: Knight Foundation supports transformational ideas that promote quality journalism, advance media innovation, engage communities, and foster the arts. The foundation believes that democracy thrives when people and communities are informed and engaged. For more, visit knightfoundation.org.

Stanford to go 100 Percent Solar by 2021

A second solar-generating plant, to be built in the next three years, will complete the university's transition to clean power and further shrink campus greenhouse gas emissions.

By Chris Peacock

Stanford's solar future is growing even brighter. A new solar generating plant—Stanford's second—announced today, will enable the university to use 100% renewable electricity in three years, more than two decades ahead of California's goal of a carbon-free grid by 2045.

Completing the university's transition to clean power, Stanford finalized an agreement to collaborate with Recurrent Energy on an 88-megawatt solar photovoltaic plant to be constructed in central California, near Lemoore. The plant is scheduled to go online in late 2021.

Because of advances from the cutting-edge Stanford Energy System Innovations (SESI), Stanford's current greenhouse gas emissions already are down by 66% from peak levels. The new solar plant, to be known as Stanford Solar Generating Station #2, is projected to reduce GHG emissions even further, to 80% below peak levels—four years ahead of the renewable energy goal established in the university's long-range planning process.

The new station will augment the 67-megawatt Stanford Solar Generating Station #1 in Rosamond, California, which came online in 2016, and five megawatts of on-campus rooftop solar power, which came online in 2017. Together, the three installations will produce enough clean renewable electricity each year to equal the university's annual electricity consumption.

"As a university, we are pursuing an ambitious plan to further reduce our carbon footprint, and our second solar plant is a critical new component of that plan," said Stanford President Marc Tessier-Lavigne. "Sustainability is a major focus for Stanford and a priority for our local community. Completing our transition to clean power builds on the groundbreaking research of Stanford faculty and students, and it marks a major advance in our efforts to provide a sustainable learning environment for our campus."

Conversion to renewable energy

To increase energy efficiency and use innovative, clean and renewable energy on campus, Stanford initiated a plan in 2008-09 that includes high-efficiency standards for new buildings, continued efficiency improvements for existing buildings and SESI, an advanced energy-management system with thermal energy storage invented by the university to heat and cool campus buildings. It has updated more than 155 buildings on campus and transformed the energy supply from one based on fossil fuels to an electrically powered heat recovery system.

A smaller SESI installation will provide energy for Stanford's new Redwood City campus, scheduled to open in 2019, giving it a small carbon footprint and path to becoming carbon-free.

Stanford achieved a 50% reduction in its greenhouse gas emissions in 2015, when the SESI electricity-powered heating and cooling plant replaced an aging, gas-fired cogeneration plant that had served the university since 1987.

"After we built the new plant, we were able, through California's regulatory process, to secure control over all electricity purchases and source the kind of electricity we wanted," said Joseph Stagner, Stanford's executive director of sustainability and energy management. "The university leadership promptly said: Let's go out and make that clean power and help reduce our dependence on fossil fuels for campus operations."

When Stanford's first solar plant went online in 2016, the university increased its clean electricity portfolio to 65%, up from the state minimum of 27%, and has since further reduced university greenhouse gas emissions to 66% below peak levels.

The university's long-range plan set a goal of an 80% reduction in total campus GHG emissions by 2025. But the transformation of its electricity supply to entirely clean renewable power by 2021 means Stanford will reach its goal four years ahead of schedule and decades ahead of statewide requirements. California enacted legislation earlier this year that requires electricity to be 100% carbon-free by 2045.

The campus will not be wired directly to the remote installations. Essentially, they will inject clean electricity into the state's power grid, and Stanford will be able to withdraw an amount equivalent to their production from that grid.

By pursuing direct, long-lasting changes to its infrastructure, Stanford avoided the need for temporary measures, such as purchasing renewable energy and carbon offsets, which give credit for renewable resources even if the power comes from other sources.

A path to future emissions reductions

As it continues to reduce GHG emissions, the university is studying additional innovations, including a new lake water heat-exchange system that will provide additional clean heat supply through SESI, converting the remaining outlying campus buildings that currently use natural gas for heating to the SESI clean hot



water supply system, and completing conversion of the Marguerite, Stanford's free community shuttle bus fleet, to electricity.

These additional changes would move Stanford GHG reduction to 90% when implemented. The remaining 10% of GHG emissions comes from a number of small laboratories and building processes. Stanford will inventory them in 2019 in order to develop plans for replacing them with carbon-free alternatives.

"Stanford's deliberate and comprehensive approach to reducing greenhouse gas emissions dovetails with the interdisciplinary research and teaching on campus and our commitment to being a good neighbor and citizen," said Robert Reidy, vice president for land, buildings and real estate.

As part of the university's new long-range plan, a Sustainability Design Team will explore these and other innovations for a carbon-free Stanford.

Over the years, the academic programs and initiatives in sustainability have achieved remarkable breadth, contributing to Stanford's international reputation for solving major environmental and energy-related challenges. Today, hundreds of laboratories, research centers and student organizations at Stanford work to solve the most urgent problems facing humanity—from food security and clean water to global warming and clean energy.

About 225 faculty and staff are engaged in energy-related research across the university, including at the Precourt Institute for Energy, the Woods Institute for the Environment and the TomKat Center for Sustainable Energy. The Jerry Yang & Akiko Yamazaki Environment and Energy Building was built in 2008 to facilitate interdisciplinary collaboration.

Accomplishing sustainability goals will require continued campus-wide participation. Stanford's My Cardinal Green program provides customized recommendations to participating members of the campus community that are relevant to their lifestyles and offers financial and other incentives.

Details about the programs and accomplishments that make Stanford more environmentally responsible can be found in the *Sustainability Year in Review*.

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