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FEATURES:

A bold choice
How going big, $600 million in grants, a Duke-led consortium of researchers from forty-three institutions, and fifteen years of work have led to new strategies in the quest to develop an AIDS vaccine.

By Barry Yeoman

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All the time in the world
Students take different approaches to the unstructured challenge of the reading period.

By Scott Huler

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FORUM 4

THE QUAD 6
Pratt freshmen get real, a little magic, women vs. men

WORKINPROGRESS 64
Senior Kyle Harvey’s spiritual hand-carved relief prints

COVER: Barton Haynes in the lab
Photo by Alex Boerner
FULL FRAME

SQUAD: Back row, Blue Devil women's basketball players Onome Akinko-James, Jazda Adams, and Emily Schaubert; front row, Corey Pilson and Jordan Lester. Image was shot with an Intrepid 4x5 camera on Polaroid type 55 pull-apart film that expired in 1964.

See story on page 16. Photo by Reid Haitcock.
This issue’s long-planned cover story follows one researcher’s fixation on developing an AIDS vaccine. We could not have planned for what’s become a fresh global fixation, on the coronavirus first identified in Wuhan, China. By late January, it had disrupted university-supported travel to China and had rejiggered the academic calendar at Duke Kunshan University.

The coronavirus beat has become a mainstay for Emily Feng ’15, the Beijing correspondent for NPR and a former Duke Magazine contributor. Her early reporting painted scenes of eerily calm, strangely deserted cities; overstretched medical staffs; and the official inclination to punish “rumor-mongering,” even as Wuhan’s mayor was “holding holiday banquets for 40,000 people and encouraging travelers to vacation in the city during the Lunar New Year holiday.” That was weeks after Chinese public-health officials had been deployed to investigate the new illness.

Feng also reported on a sort of pop-up hospital in Wuhan to quarantine patients; that project mirrored efforts to quarantine Beijing-area patients during the 2003 SARS epidemic. Such tales of parallel outbreaks resonated for those of us with long Duke Magazine memories. “Life in the Time of Plague,” a story sparked by SARS, ran in July-August 2003. The writer was Phil Tinari ’01, a former intern for the magazine, who had just returned from two years living and working in Beijing and was doing graduate work in East Asian studies at Harvard.

Tinari’s uncomfortably firsthand look at SARS came after he had been hired to work as a researcher and translator for The New York Times bureau in Beijing. On his second day on the job, he went with the Times’ two bureau chiefs to Guangdong province. They interviewed “snake and civet mongers” in the meat markets where the virus might have jumped from animals to humans.

Later that week, “we were the first foreign journalists to make a SARS-inspired visit to the provincial capital of Taiyuan,” he wrote, “snooping around the grounds of the Shanxi Province People’s Hospital that was feared to harbor the first cases.”

Tinari saw a harking back to Cultural Revolution groupthink. Slogans were unleashed appealing for solidarity (“In the face of adversity, the unity of the masses is an impregnable fortress”); discounting any emotion-driven panic (“Depend on science; overcome SARS”); and highlighting the heroes who would make it all right (SARS would be “conquered by the government and the Communist Party of China”).

SARS had fundamentally shaken, but not fundamentally altered China, Tinari concluded. “A few weeks would go by, and things would be largely back to normal. Another few weeks would go by, and I would get on a plane and go home, for good.”

That wasn’t quite the case. Tinari went on to become an expert in Chinese art—as a curator, founding editor of the Chinese edition of Artforum, and now head of the UCCA Center for Contemporary Art in Beijing, which, in addition to championing young artists, offered the first major survey of Picasso in China.

In late January, UCCA’s website was carrying a stark (English-language) message embedded in a big block of red: The center would be closed until further notice. “We are sorry for any inconvenience caused and our hearts go out to all those affected by the spread of the virus.”—Robert J. Bliwise, editor
A tall tale
I enjoyed reading Marlin M. Volz Jr.’s summary of Duke basketball through the early ’60s [Letters & Comments, Fall 2019]. I came to Duke for graduate school in the fall of 1966 just after their peak. Two particularly frustrating losses that year came in back-to-back games in Pauley Pavilion with UCLA, who went on that season to be the NCAA champion. The Saturday night game was on national TV. Several days later, I was wandering the campus looking for a working phone and ended up in a line for a phone booth in the men’s quad. Stuffed into the booth, bent almost in half was the largest young man I’d ever see, the 7-foot, 6-inch Duke center Mike Lewis, who had had a particularly rough road trip. I could easily hear his plaintive plea for mercy from an obvious critic, “But Mom, he was so-o-o big!” His reference was, of course, to Lew Alcindor, well on his way to being the incomparable Kareem Abdul-Jabbar.

Jean V. Smith M.A.T. ’71
Media, Pennsylvania

CLARIFICATION
In “Something for the People,” about the home gallery run by Frank Konhaus ’80 and his wife, Ellen Cassilly, published in the Fall 2019 issue, credits for the work shown in accompanying photos were missing. In the opening image on pages 38 and 39, the photo installation is CST #2 by Philip Augustin and the other images in the gallery are by Augustin and Elizabeth Stone. The tintype photographs of Konhaus and Cassilly are by Geoffrey Berliner at the Penumbra Foundation.

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Please limit letters to 300 words and include your full name, address, and class year or Duke affiliation. We reserve the right to edit for length and clarity. Owing to space constraints, we are unable to print all letters received. Published letters represent the range of responses received. For additional letters: www.dukemagazine.duke.edu.
FREE: The fare available on Public Domain Day

NEIGH: Relaxing with a therapy horse

FETCH: Blue Devils get a puppy break.
THEQUAD
LIFE ON CAMPUS FROM EAST TO WEST

CHEESE: Former Tallahassee mayor Andrew Gillum at MLK celebration

STRETCH: Community Dance Day at the Ruby

IN GEAR: Bass Connections gets $5 million from Fortin

BRR: Winter on East Campus

EN POINTE: Nutcracker duo
ANIMALS AND MICROBES

Bacteria buy time to defend themselves from viruses and other dangerous elements by creating decoy spots for attack. The decoy spots act as traps, keeping the viruses busy while the bacteria develop long-term resistance strategies. Improved methods for mammal tracing and observation show that sonar and other noises faced by marine mammals are louder than previously thought and more strongly correlated with beach strandings. When you break a bone, your body naturally increases production of the healing biochemical adenosine, though that adenosine is quickly metabolized. Researchers wrapped broken bones of mice with a special bandage that kept the natural adenosine in the area and found the bones healed better. Bandages loaded with additional adenosine helped, too. Speaking of mouse bones, an experiment on mice revealed that certain biochemical receptors can be activated that can not only prevent the bone loss of osteoporosis but also encourage rebuilding of bone. A hopeful sign for human bones.

PEOPLE

The force of a raindrop hitting the windshield of a jet traveling at supersonic speeds creates a two-dimensional wave that can cause a specific kind of circular crack in the windshield. The force that creates those cracks may turn out to be useful in demolishing kidney stones. A drug successfully treating breast cancer for decades has been resistant to an understanding of exactly how it works. It turns out it seems to work through antibody-dependent phagocytosis, which is a way that specific immune cells engulf and eat particles, specifically tumor cells coated with a particular antibody. This understanding might enable the introduction of an additional antibody to remove obstacles in the process of tumor cell death. People who have attention-deficit hyperactivity disorder (ADHD) are more likely to choose to use nicotine, and they like it more than people without the condition. One reason we have no vaccine for HIV is because our immune systems perceive the early antibodies that neutralize it as dangerous and shuts down their production. It turns out maybe the immune system can be coaxed into making those antibodies. You can make a laser that lives in the gap between infrared light and microwaves. It’s highly tuneable, and it can see through clothes and suitcases but isn’t dangerous like X-rays. How teens feel about family status is a more-accurate predictor of their well-being than their actual status.

MISSCERNANY

Using aerial and satellite imagery, researchers may be able to identify forests at greatest risk from climate change, ideally in time for protective measures. New tiny, chip-scale photodetectors can use the science of plasmonics to track nanoscale physical phenomena to trap frequencies of light beyond the visual. Potential uses could include telling the difference between cancerous and healthy tissue and when a chicken breast is contaminated with dangerous bacteria. After perusing a bunch of photos, a computer can look at a picture of a bird and identify it from among up to 200 species. It also explains what it’s looking at to come to its decision. Next for the computer: mammograms.

DUKE

Cosmologist Daniel Scolnic won the prestigious Packard Fellowship in Science and Engineering, given each year to a coterie of promising early-career scientists, who each receive $875,000 of funding over five years. Scolnic plans to continue his study of the Hubble Constant, which is used to measure the expansion rate of the universe. Scolnic’s research doesn’t agree with the constant, so now he has the funding to find out whether his research or Hubble’s needs updating. Senior Gabriella Deich, an Angier B. Duke Scholar, has been named Duke’s fiftieth Rhodes Scholar. She is Duke’s fifth Rhodes Scholar in three years. Two Duke students (seniors Charles Berman of Durham and Max Labaton of Washington, D.C.) and three alumni (2019 graduates Yunjie Lai of Chongqing, China, and Kevin Zheng of Glenelg, Maryland, and 2017 graduate Steven Soto of Phoenix) were chosen as Schwarzman Scholars, spending a year earning a fully funded master’s degree in global affairs at Tsinghua University in China. Economist Philip Cook of the Sanford School of Public Policy has won the 2020 Stockholm Prize in recognition of his decades of research into gun violence and its effects. With a grant from the National Institute of Environmental Health Sciences, Duke will set up the Duke Environmental Analysis Laboratory, which will help identify chemicals in the environment that may be dangerous. In its efforts to develop a universal flu vaccine, the Duke Human Vaccine Institute has received three research contracts from the National Institute of Allergy and Infectious Diseases that could eventually pay up to $400 million over seven years.

Go to dukemagazine.duke.edu for links to further details and original papers.
Where’s Home? The Hollows

Alex Torres

HOMETOWN: Fort Lauderdale, Florida
MAJOR: Psychology
ETC: Morning person; Taylor Swift fan
ON LAUREL: “She’s always there, will always be down to do whatever, no matter what.”

Laurel Zhang

HOMETOWN: Guilford, Connecticut
MAJOR: Economics and public policy
ETC: Blue Devil fencer (foil); Can’t stand Taylor Swift
ON ALEX: “She’s really funny. I don’t like telling her because then she gets all excited about it.”

The Seniors met as freshmen when they lived down the hall from each other in Brown. “My roommate and I got along but we had very different personalities,” says Alex, “so I would always go to Laurel’s room. She always kept her door open for me.” They’ve been roommates every year since.

Laurel’s heading to New York with a job in finance; Alex is looking for a gap-year position before heading to medical school. So, for spring break, they’re taking a girls’ trip. “Alex and I, along with some of our suitemates, we’re going to New Orleans. We spent all of college being friends, but we’ve never taken a trip. We want to take this last opportunity,” says Laurel.

—Adrienne Johnson Martin, photography by Chris Hildreth
We imagine boundaries between students, faculty, staff, alumni, but in truth, Duke is just one large intellectual community—a community of people who are curious, who want to make a difference in the world, who understand that we won't get where we need to go without access to other people who can challenge us, who know things we don't know, who can push us to be our best.

It is critical that Duke recommit to educating for a lifetime. And I like to think in doing so, we'll recover perhaps the oldest model of higher education. When universities were created in the middle ages, they were guilds of scholars who decided to gather together around libraries—the research infrastructure of the day—and when we give degrees (in Latin, I might add), we're very medieval about the whole thing. We put on medieval gowns and regalia, but we forget that those degrees are not actually certificates of completion. That's not what they are intended to be. They are ranks in the guild: You're a bachelor, you're a master, you're a doctor. In other words, when you graduate from a place like Duke, you don't leave. You join.

The fact is, your education is what happens after you're at Duke. It's not what actually happens when you're on campus. I don't want anybody to feel that in terms of the life of their mind, their best years were at Duke. I'd like to think that we got you started, and the best years were afterward. And if we can, as a community, lean on each other through those years, how extraordinary would that be?

Because in the alumni community, we have people with a remarkable breadth of expertise and experience. And if we can mobilize all of that—help each other, support each other—the sky is truly the limit. So we have to start delivering more of that to every member of the Duke family, to really give meaning in life to this notion of lifelong education. That's what Duke's future is really all about.

—President Vincent E. Price
Miami, Florida
January 2020
Meeting alumni far and wide

PRESIDENTIAL EVENTS FROM THE PAST FEW MONTHS:

**November**
ON CAMPUS: Kicked off the tenth DEMAN Weekend. DEMAN (the Duke Entertainment, Media, and Arts Network) includes workshops and lectures sponsored by Duke’s arts departments, career panels, résumé and portfolio reviews, the Duke’s Got Talent show, and a keynote conversation with creative-industry leaders.

RALEIGH, NORTH CAROLINA MUSEUM OF ART: In conversation with Diego Bohorquez (medicine) and Nita Farahany (law)

CHICAGO, ART INSTITUTE: In conversation with Jonathan Mattingly (mathematics) and Jenny Tung ’03, Ph.D. ’10 (evolutionary anthropology and biology)

**December**
ON CAMPUS: Duke Women’s Weekend. Gave the welcome address before the opening plenary session. The weekend brings back alumnae to explore interests, hear new perspectives, seek advice, and engage with other alumnae and the university.

**January**

MIAMI, RUBEEL MUSEUM: In conversation with Charles A. Gersbach (biomedical engineering) and Megan Mullin (environmental politics)

**February**

ON CAMPUS: Duke Women's Weekend. Gave the welcome address before the opening plenary session. The weekend brings back alumnae to explore interests, hear new perspectives, seek advice, and engage with other alumnae and the university.


**Upcoming**
HOUSTON
DALLAS
SEATTLE

DUKE MAGAZINE WINTER 2019
Head first and hands on

In the First-Year Design program, Pratt freshmen tackle real-world engineering challenges.
A cold rain falls on Durham.
Per the laws of physics, when the water hits the ground it runs downhill. It follows the path of least resistance, carrying with it the detritus of American consumer culture—Pepsi bottles, potato chip bags, six-pack rings, Miller Lite cans. It flows along roadsides and into storm drains. It emerges from culverts, where Lilliputian cascades feed ditches and gullies. It washes a cornucopia of garbage into Ellerbe Creek.

“We just keep feeding the beast,” says Ian Pond, observing the creek several days before the storm. That day, the water level was several feet lower, leaving bright strips of plastic visible on Ellerbe’s banks, in the underbrush, and tangled in low-hanging branches. Pond, board secretary of Ellerbe Creek Watershed Association (ECWA), knows that Ellerbe Creek feeds Falls Lake—Raleigh’s reservoir—where he’s seen trash islands a hundred feet wide, forty feet deep, and dense enough to stand on.

A few miles south, a small team of Duke freshmen is working to help starve the beast—that, or at least mitigate the amount of trash that makes it from street to stream. Mia Thompson, Danny Gonzalez, Davis Finfrock, Jihyeon “JJ” Je, and Shaan Gondalia are five of the 300-plus Pratt School of Engineering freshmen enrolled in the required First-Year Design (FYD) program, and designing an effective trash trap is this team’s semester-long project. Working out of the Design Pod or the Foundry, carved a few years ago into the basement of Gross Hall, other teams work to fit the needs of the Duke Lemur Center, Skanska (the construction company responsible for many of the campus’ recent buildings), the Museum of Life and Science in Durham, and a range of organizations and individuals. A few months ago, Thompson, Gonzalez, Finfrock, Je, Gondalia, and their classmates were high-school seniors. Now they’re facing engineering challenges with real-world ramifications—and potential for real-world innovation. In prior years, a book holder designed for David M. Rubenstein Rare Book and Manuscript Library and an adjustable painting hook developed for the Nasher Museum have both made their way to the patent process.

The design-driven curriculum “has thrown us head-first into doing hands-on engineering,” Finfrock says. “I really like that. It brings together all [types of] engineers, and you can combine a lot of aspects of engineering into one single project.” FYD feels less like a class in the traditional sense, Thompson adds, but is more about providing Duke engineering students with the foundations and resources to find and maintain their footing.

For this team, that experience takes place in the Design Pod—the glass-walled ovoid that until 2017 housed the café Blue Express—but also in a wetlands preserve tucked behind a North Durham shopping center. The aptly named Beaver Marsh is one of ECWA’s five public preserves, and on its thirty-four acres Pond has seen bald eagles, snapping turtles, mink, otters, coyotes, and even one enormous wild turkey. The FYD students weren’t the first engineers here, Pond points out: The beavers who built a sizable lodge in the center of the marsh diligently maintain channels deep enough to kayak in and a tiered system of dams that Pond compares to the locks of the Suez Canal.

ECWA has worked with FYD students since the program’s pilot year in 2017, making this the third team to design a trash trap. Teams one and two used mesh in their designs, which captured too much natural debris and caused the traps to clog, sink, or break, or positioned their traps in the creek itself, which swells to a dynamic torrent after a hard rain. The 2019 team’s trap abandoned mesh entirely and is designed to sit about fifteen feet downstream from a culvert; if this approach works, it’ll be replicated below other storm drains. If not?

“Personally, I think we all really, really want this to work better than the past few years,” says Thompson. “If we fail, another thing to rule out.”

This is by design, says FYD director Ann Saterbak, who instituted this program when she came to Duke from Rice University in 2017. Project-based design courses are typically reserved for upperclassmen, with the frosh learning principles first, application later. By the FYD approach, however, nascent engineers learn to swim by swimming—and they’re encouraged to learn from failure rather than view it as defeat.

“The idea of iteration is kind of baked into the course,” Saterbak says. “The grading system is not punitive toward mistakes, and the faculty, the TAs, we celebrate learning rather than perfection.”

Pond takes an engineer’s mindset, too. Since 2017, each trap has crept closer and closer to the source of the trash, moving upstream and out of the creek and into the ditches and gullies that feed it. And this year’s iteration could be the one that catches litter before it can wash into Falls Lake—that, or it could be one more step toward the final design.

“We’ll see,” says Pond.—Text and photography by Corbie Hill

THE Quad
Toy story?
A radiology research fellow and the mystery of a collection of manikins

In the Josiah Charles Trent History of Medicine Room at the Rubenstein Library, Duke radiology research fellow Fides Schwartz unrolls a little hand-sized puff of bubble wrap and lays out on the table all the pieces of a neat, slightly translucent white medical manikin, about six inches tall. The body of a woman: She’s pregnant, and her midsection lifts off, revealing removable heart, lungs, baby. “You see?” Schwartz asks. “Actually it does all fit together.”

She points out the details: “The little baby holding its hands up to its face,” she notes in delight, and to be sure, the baby, about the size of the nail on your pinkie, is curled up, its little hands in fists on either side of its head.

The manikins aren’t new—they’re old and rather mysterious, part of the collection of medical materials (equipment, manuscripts, and an unforgettable tray of glass eyes) donated by Trent and his widow, Mary Duke Biddle Trent Semans ’39. The twenty-two manikins are tiny, intricately carved anatomical dolls probably made in the late seventeenth century in Germany. They were long thought to be tools for medical teaching, but that now seems unlikely, Schwartz notes, since it turns out they were made of ivory, which is pretty expensive material for something students were going to handle a lot. They’re now suspected to be collectibles or perhaps even toys.

RESTING: Below, with finely upholstered wooden beds and even clothes, the medical manikins are now thought to be collectibles or even toys.

That they’re definitely made of ivory is something
Schwartz has helped figure out. There are fewer than 200 of these figurines worldwide, so as an effort toward protection and understanding, the library began having the manikins scanned in 2018. The one Schwartz carried around was, in fact, a 3D print made as a result of those scans. “The goal is to share them [through both image and 3D print] to a wider audience that ranges from medical professors, to students, to art historians,” says librarian Rachel Ingold. And, not incidentally, radiology research fellows. Schwartz read about the scans and reached out to Ingold. “Librarians love helping people,” Ingold says. Says Schwartz, “So I was allowed to look at all the scans and to attend a scan, too.” As a radiologist, she says she thought, “If we have a CT scan of it, we can do more with it than just look at the surface.”

In fact, those are micro-CT scans, which enable viewers to look down to the cellular level, enabling Schwartz to make her diagnosis of the manikins’ makeup. Micro-CT scans have a resolution from forty to 100 micrometers. A human hair is about 100 micrometers wide, and a cell is about fifty micrometers, so the scans enabled Schwartz to recognize the cellular structure of the manikins’ material. “Almost all of them are wholly made of ivory,” she says. “One seems to be made of deer antler, and one, most is ivory and one piece is whalebone.”

Elephant or mammal ivory is easy to recognize: “because it’s a tooth,” she says. “Layers of dentin, very densely packed, it looks a little like tree rings. As soon as you see one slice you know.” Bone, on the other hand, has a different structure, including Haversian canals—tubes for blood vessels and nerves. Whales live underwater, and their bones are buoyed by the sea, so whalebone canals are more rounded than the ones in deer antlers. And by the way, yes, antlers are bone, unlike, say, rhinoceros horns, which are more like claws or hair. “I learned this through this project,” Schwartz makes clear, laughing; she didn’t come to Duke an expert in ivory, antler, and whalebone.

Encouraged by her fellowship mentors and supported by a panoply of Duke technicians, scholars, and doctors (the research has seven coauthors), Schwartz submitted her findings to the Radiological Society of North America for its annual meeting. About 13,500 abstracts are submitted for presentation, of which the society accepts about a tenth. The results presented by Schwartz were not only accepted but chosen as one of the dozen or so highlighted in the conference news release. This led to press briefings and stories all over the world. “I was not expecting anything like that,” Schwartz says. It’s an unexpected world. Not long after the manikins results, Schwartz was watching scans of objects for Duke’s Nasher Museum.—Scott Huler

The goal is to share them through both image and 3D print to a wider audience that ranges from medical professors, to students, to art historians.
At the end of a nice three-pass sequence started by senior Corey Pilson, the ball ends up in the hands of junior Nate Tewell streaking inside. Tewell catches the ball under the hoop and completes the play with a smooth reverse, a high-level play by high-level players.

No applause, though. The seats are empty, and the few people on the Cameron benches are coaches or resting players like redshirt freshman Mikayla Boykin, idly spinning a ball on her forefinger. It’s just practice, and most of the players are women: It’s practice for the women’s team.

“The men just help us to challenge ourselves in practice,” says special assistant Keturah Jackson ’09, herself an all-ACC player who practiced against men during her time at Duke. “They’re such an important part of our preparation. Not just strength and quickness, but having bodies for the scout team,” to run the plays of an upcoming opponent without reducing court time for the women running Duke plays.

Bigger, faster, stronger opponents and bodies for opposition: It’s easy to see what the team gets out of it. But what about the guys? Guys who get up at 6 a.m. to come practice for hours before class, bodying up against players who outplay them despite their size advantage? Guys who practice for six to ten hours a week and never get to run onto the floor in front of a cheering crowd, much less play in front of one?

“Well, they do feed us,” says Pilson, a political science major working for a certificate in documentary studies. True enough: The post-practice breakfast the men share with the team would hold its own in a hotel lobby. But Pilson laughs; that’s not why he’s here. He loves the team and the coaches, he says, but also “it’s a chance to play basketball with people who can play basketball.” He’s like most of the half-dozen or so guys who practice with the women’s team every year: A ballplayer in high school who had peaked by his senior season, he knew he wasn’t going to play for fans at Duke, but he wanted more challenge than he found in intramural or pickup games. Running plays and working to challenge the women keeps his skills sharp: “If I get crossed up, I want to go home and practice. They make me want to get better.”

Tewell, a junior neuroscience and psychology major, had a somewhat harder call. He was planning to attend—and play for—Johns Hopkins, but then he got into

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**SPORTS**

When these guys practice with the women’s basketball team, everybody gets a challenge.    |    BY SCOTT HULER, PHOTOGRAPHY BY REID HAITHCOCK

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www.dukemagazine.duke.edu

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"If I get crossed up, I want to go home and practice. They make me want to get better."

CATCH: Freshman Jordan Laster (4) and guard Azana Baines (11) listen to direction from head coach Joanne P. McCallie.
Duke, where he wouldn’t even make the men’s squad as a walk-on. Not willing to turn down Duke, he looked for another outlet for his first-rate skills, ending up playing a rec-center game where he was noticed by player Kyra Lambert, who was there rehabbing. “She asked if I was interested in working with the women,” and Tewell was in; he often spends twenty hours a week working with the team now.

Getting noticed on the rec floor was how it all started, says Gail Goestenkors, Duke’s head coach from 1992 to 2007. She says she went looking for men to post up against her players after the 1993-94 season, when the University of North Carolina women won the NCAA championship and Goestenkors got tired of her team getting personhandled. “Marion Jones was there,” she recalls, “and they were so much bigger than we were, and more physical.” She and another coach “went over to the rec gym and watched guys play pickup.” Those who were best they invited out, and a new aspect of team practice was born. Goestenkors doesn’t take credit for bringing men into the women’s practice—she thinks it was beginning at other programs at the same time—but she knows it helped. “We ended up beating Carolina that year.”

And if the practice men get none of the glory, they get some of the credit. And blame, too, if something goes wrong. “I hurt when I see them lose,” Pilson says. “If there’s something we practiced and they don’t do it in the game, I’ll get mad. ‘We practiced that!’”

“That has to be your mentality,” Tewell says. “There’s nothing holding us here except for love of the game and love of these guys.

“And a couple of T-shirts a year.”

“I hurt when I see them lose.”
PALE SMOKE seeps from holes in the roof of 1915 Yearby Avenue. Minuscule flames lick the eaves tentatively, cautiously, like swimmers dipping their toes in cold seawater. Firefighters from the Durham Fire Department stand by their trucks. They’re waiting for the fire to grow before they go in.

And it grows. A second-story window warps visibly as tongues of rich orange flicker in the room behind. Step back, says Captain David Young. The veteran firefighter is decked out in many pounds of firefighting gear—face mask, oxygen tank, heavy coat and boots, the works—while I’m the model of inutility in my khakis, cardigan, and favorite pair of Adidas sneakers. I back up a few steps and soon enough the window bursts outward with a rain of broken glass and a plume of gray smoke. And then the fire starts in earnest. Red and black flames and thick columns of sooty smoke emerge from ventilation holes one team of firefighters already cut through the shingles. Sections of roof collapse.

The ladders come out. The attack team suits up and climbs the exterior stairs. Firefighters move through the burning building, their silhouettes occasionally visible through now-glassless windows. High-powered hoses blast the fire from within. Jets of water knock aside sections of already weakened roof and arc another thirty, forty feet through the air, soaking nearby trees.

Within ten minutes, flames no longer dance on the roof, and 1915 Yearby merely smolders.

It’s late November, and most of Central Campus is being razed to make way for whatever comes next. Granted, many buildings are being demolished the old-fashioned way—with bulldozers—but the destruction of several former student housing units serves a dual purpose. In their last educational act, these apartments are being used to train firefighters.

Assistant Chief Willie Hall Jr. watches from the grass. Hall is a second-generation Durham firefighter who has served the city since 1987, while his father’s career started in ’61. Today he trains a new generation. See the firefighter leaning on that truck? Hall asks. He grew up with my son. I coached him when he was ten.

Indeed, the coaching continues, as overseeing training is one of Hall’s major roles. Some of the firefighters in attendance today are fresh to the department, though a training burn in this kind of building is a rare opportunity benefiting everyone. Most of the time, Hall says, the department is offered houses in lousy condition—many of them already condemned—and it’s just not the same. It’s rare to train in a multifamily dwelling, as Hall describes this type of building, and one in decent condition at that.

Hall and Young take this exercise seriously. Though the burn is under control and the building is surrounded by trucks, this is still real fire. One firefighter emerges with his protective gear scorched. He drops his battered helmet in the grass and explains that a ceiling fan fell on him, a hint of fatigue creeping into his voice. This man was just inside a burning building.

You can’t see much in front of you, thanks to the smoke, Young says. It’s nothing like the movies. And unlike the movies, this is real danger. Young watches the burning building, his affable expression turning grave. Then he says what he’s thinking: Please remind your readers to change the batteries in their smoke detectors. For Young, it’s not a rote Public Service Announcement, but a question of life or death.

It’s approaching noon, and soon the DFD will put out the fire completely and break for lunch. With the flames gone and blackened beams visible through gaping holes in its roof, 1915 Yearby looks like some enormous, partially eaten carcass. The morning’s teams, their training complete, will return to duty, while fresh teams from across the city will arrive to train in these apartments. And then the afternoon fire will be set, and once again Durham’s firefighters will go toward danger.

It’s what they do.

—Text and photography by Corbie Hill
Please remind your readers to change the batteries in their smoke detectors.
The first rule of magic is not to trust magicians, says Duke Sleight Club president Wesley Pritzlaff. The second is not to forget what your card is. He absently shuffles a deck as he talks, as do many of the dozen or so students in attendance. It’s not long after a spectacular sunset, the kind that causes Duke Chapel to glow golden orange as shadows lengthen toward it, and Pritzlaff, a junior, is leading a sleight-of-hand session in the Student Wellness Center’s Oasis West room. He shares performance tips (the more choices a magician gives their spectators, the better) and misdirection techniques (hide smaller movements within larger movements; if you look your audience in the eyes, they won’t look at your hands). Pritzlaff offers alternatives (if you have a hard time spreading the cards, don’t stress it; there are other techniques), even as he reveals what the magician’s hands do between “pick a card” and “is this your card?”

“That’s where the magic happens,” he says.

There’s more to this than wowing friends and strangers with deft card tricks, Pritzlaff believes. This evening’s sleight-of-hand session, for instance, is part of DuWell’s Moments of Mindfulness programming (DuWell is a branch of the Student Wellness Center). Other recurring Moments of Mindfulness include yoga, knitting, drum circles, tea ceremonies, and meditation. The gist is that students arrive with all the chaos and baggage of their day, their week—what have you—and depart calm, grounded, and present. There’s no mental space to perseverate when one is learning a card trick that requires focus, digital dexterity, coordination, and close attention.

And that’s where the magic happens.

“You truly have to be in the present moment to be able to coordinate hand-eye movement to a degree to stay present with the person you’re presenting it to—especially if you’re doing fast movements to try and hide things that you’re doing,” says Thomas Szigethy. “When they leave that one-hour session they’re feeling better about themselves and they’re feeling less stressed.”

Szigethy, associate dean and director of DuWell, offers a succinct explanation: These are activities that ground one in the present moment, which is happiness, rather than the past, which is regret, or the future, which is fear.

These concepts aren’t new, Szigethy continues. Chinese Baoding balls or Tibetan singing bowls operate on a similar principle to the Moments of Mindfulness offerings. There’s an emphasis on focusing the mind through simple movements, concentration, and digital dexterity. More recent inventions that operate on the same principle include fidget spinners and Rubik’s Cubes.

“The cards can be your anchor,” says Pritzlaff. Learning a new trick is cognitively demanding, both in terms of mastering hand motions and maintaining the patter that keeps audiences at once misdirected and entertained. Even a few seconds of silence can allow a spectator’s attention to wander; can allow the spectator to look too closely at what the magician is doing with his or her hands.

Pritzlaff, a neuroscience major, shares his passion through Duke Sleight Club and Moments of Mindfulness, sure, but he has the long game in mind as he develops his card tricks. He pictures his future self a physical therapist who does magic on the side, but without erecting walls between the two interests.

For Pritzlaff, magic has always been about connecting with others, which is a major reason he feels it can be incorporated into physical therapy. A magic trick is meaningless without an audience to entertain, he posits, while therapy isn’t therapy without a patient. If Pritzlaff is going to learn something, he’s going to share it. And if he’s going to share something, he’s going to want to improve someone’s day in the process—even if it takes intense focus.

“You’re static if you’re just practicing the same things,” Pritzlaff says, simultaneously describing magic and therapy. “You have to push yourself, develop a plan of how you move forward.”

And that’s where the magic happens.

—Corbie Hill, photography by Les Todd
What do you call it?
One of the joys of working in discovery is naming what you find.

Along, low creature, looking like a cross between a coyote and an otter, moved through something akin to a mangrove swamp. It had stumpy legs and a long skull full of sharp teeth. On land, it slunk between fruiting trees in whose branches lounged the earliest monkeys. Four-tusked and hippo-like elephants trundled nearby in this lush, tropical proto-Nile ecosystem. When this creature took to the river, it shared the water with early manatees.

It was 34 million years ago—the end of the Eocene—and today's familiar mammals were establishing themselves and diversifying. Yet not all forms of life would flourish. Eventually the long, low semiaquatic something went extinct, followed eventually by its entire order. Today, its fossilized remains occupy a drawer in the Division of Fossil Primates' unassuming brick building a few blocks north of East Campus, awaiting a scientific name.

That task will fall to Division of Fossil Primates curator Matt Borths, who can read these bones like a book. Borths is an expert in creodonts—the hyaenodont clade in particular—which preceded the modern order Carnivora as the planet’s dominant meat-eating mammals. He has named five species officially and has two more on deck.

“It’s an incredible responsibility and a rush, just in the sense that this is something that will theoretically last for as long as humans are talking about organisms,” says Borths.

Michael Windham, Duke Herbarium’s curator of vascular plants, knows the feeling. Since 1991, he has named dozens of ferns, mustard plants, and sunflowers, though if one counts nomenclature transfers (moving a species from one genus to another), that number jumps to the hundreds.

“I’m a discovery junkie,” Windham declares.

Taxonomy takes many steps. A paper must be written, reviewed, and published. The taxonomist community must decide whether the author has made a valid case. Acceptance occurs when the majority of scientists in the field start using that name. Once that is all done, what had been just another mis-identified fern specimen becomes the holotype—that is, the prime specimen—of a freshly described species.

“This holotype is the thing that is called Akhmatenatus nefertiticyon,” Borths says, holding the flattened, fossilized skull of a hyaenodont he named in 2016. “The original is this, so every comparison has to come back to this thing.”

A scientific name’s primary purpose is to efficiently express an organism’s properties. The species name _ecuadorensis_, for instance, for an Ecuadorian fern, or _nefertiticyon_ for a doglike creature from Egypt. Within taxonomy’s conventions, however, there’s room for wordplay and in-jokes. “We know Nefertiti from a head that’s a bust, and we know nefertiticyon from a busted head,” Borths says, as he grins.

Maybe it’s the age of the fossils surrounding him, or maybe it’s creodonts’ success—they thrived twice as long as modern carnivorous mammals have—but Borths is modest, almost humble, about his role. Taxonomists, he says, make a small contribution by signaling that a lineage exists—or existed. That it survived for a certain amount of time. That this is how it survived. That this is what made it special. That this is something we didn’t know life could do.

“The animals don’t need to know that,” Borths says. “They don’t care about that. It’s just hyper-intelligent monkeys that care.”—Corbie Hill
Is there a just-right model for health care somewhere?
The United Kingdom has a completely socialized, top-down system that works fairly well. Then there’s Germany, where the system is built on heavily regulated private insurance, and it meets their needs pretty well. There are lots of ways to get it right, though no system is perfect. The U.S. has found lots of ways to get it wrong.

You write about Germany, in the era of Bismarck, as an illustration of moral hazard—that is, how lowering the price of medical care can also lower the individual’s motivation to make smart decisions.

At the end of the nineteenth century, more and more Germans were moving from small farming communities to larger cities. If a farmer broke his wrist, his family and neighbors could take over his chores until he recovered. If a factory worker broke his wrist, he might face financial ruin. So a new law required large factories and professional guilds to care for employees’ financial needs when they were too sick to work—with an emphasis on lost wages rather than hospital bills. After the law, German workers became less likely to shrug off ailments. They called in sick at double the previous rate. And their illnesses lasted longer.

You don’t favor a free-market model that throws all the costs to society. You also don’t favor forcing consumers to choose only what they can afford to pay for.
The debt I’m talking about is in part the debt incurred by society when people demand more health care than they need or seek out care that is not worth the associated cost. I’m also concerned about personal debt for people with high out-of-pocket expenses. In 2006, 10 percent of American workers had plans that carried deductibles of $1,000 or more; ten years later, it was more than 50 percent. Much of this move toward high-deductible plans came from employers: As employers sought to reduce the cost of employee benefits, out-of-pocket rates soared.

You open the book with a story that illustrates the importance of physician-patient conversations around costs.

A thirty-nine-year-old guy receives chemotherapy to shrink a tumor. When they get him to surgery, they find the cancer has spread from his colon to his liver. His Duke oncologist says, “Why don’t we put you back on the chemotherapy that shrank the original tumor?” At which point the patient says, “I can’t do that. I went bankrupt paying from the first round.” Intravenous therapy rather than a pill would have cost the patient next to nothing. The oncologist thought it would be more convenient for the patient to take a pill. He didn’t realize such convenience was bankrupting his patient.

Don’t incentives sometimes play out in just the wrong way in health care?

There are some things that are really expensive and are life-altering. Why should you be unable to afford that? If some treatment or medication is priced high but brings a lot of benefits, that should be affordable for the patient. If it’s priced high and brings almost no benefits, I’d like to see the patient pay for most of that.

How do your fellow physicians feel about the health-care system in its current form?

We have record-high levels of burnout among physicians; in some specialties, the majority of physicians report being burned out. Some of these reimbursement models force them to spend more time tracking every decision than listening to their patients. Or they feel compelled to prescribe overly expensive medicines, because that’s how their clinic pays its bills. Most of us enter the medical profession to interact with people at some of the most meaningful moments. Those meaningful moments can’t be reduced to a twelve-minute office visit.

—Robert J. Bliwise, Photography by Les Todd
Laura Huang B.S.E. ’00, M.S. ’01, an associate professor at Harvard Business School and author of *Edge: Turning Adversity into Advantage*, about why she believes you can flip stereotypes and obstacles in your favor.

**On how her research reconsiders hard work:**
You can take two different people who work equally hard and one will be more successful than the other. I would never say that hard work’s not critical. It is critical. But hard work alone is not enough. A lot of times hard work leaves us frustrated, and that’s because [the obstacles are] signals, and perceptions, and stereotypes of others. That’s what I found in organizations and start-ups—that there are so many biases, and disadvantages, and constraints that people face.

And so, about three years ago, I got sort of frustrated because all I was seeing were these disadvantages that women and people of color and just everyone were facing because of these signals and perceptions and cues.

That’s when I started studying how people can empower themselves. People need to empower themselves, even when the systems are maybe not changing quickly enough, or not changing at all, or not changing in the way we think they should.

The book is really about how we can flip stereotypes and obstacles in our favor so that we can find and create our own edge, especially when some people seemingly always have the advantages and some people seem to have privilege. When we’re in a position where we don’t have privilege, we can make our own privilege.

**On trusting your intuition:**
The gut-feel piece of it is that a lot of times we have this connotation around gut feel as being something that’s emotional and quick and subconscious and biased in a lot of ways, that we then need to go and find data to back it up. When we recognize that, a lot of times, our gut instinct and our intuition are based on something that’s very cognitive, as well as emotional—it’s based on our experiences and our beliefs and pattern matching, and lots of things that go into it, in addition to our emotions.

When we trust and we understand how to hone our own gut feel, we become much better at going into a situation and being able to understand how others see us so that we can then flip those negative stereotypes in our favor and guide how they see us. There are some contexts in which we do want to be analytical. But there are other contexts when we want to be less analytical and rely much more on the soft kind of data out there. Knowing the difference is also a part of this process.

**On her new research interests:**
I am really, really trying to think through the fact that we’ve been talking about these issues for a long time, and in some ways, we’ve made progress. But in other ways, we’ve taken ten steps backwards. It can’t just be the structural things. And so, how else can we understand this? The other component is that, as we become much more aware of diversity and inclusion and advantage and disadvantage, what things are getting hidden?

Some of my research, for example, on accents—we know we can’t discriminate against people with accents. When we’re rating people, we take that into account, but then we have hidden things that are associated with people with accents. We all agree we’re not going to discriminate against somebody with this accent, but then we say, “Okay, can we all agree that we want to hire somebody who thinks outside the box, and someone who’s innovative, and interpersonally influential?” And everyone says, “Yeah, yeah, of course.” And then it just so happens that all of the people who are rated the lowest on thinking out of the box and innovative and interpersonally influential are people with an accent.

Those are the types of things that I want to continue trying to shed light on so that we can actually truly start to see progress.

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*This interview has been edited and condensed.*
Duff calls herself “Atlanta’s funniest lawyer,” and in *If You Did What I Asked in the First Place* (Deeds Publishing), she finds the humor in everything from motherhood, to planning her own funeral, to the lack of pockets in women’s clothing. Below, she shares the books that inspired her foray into humor writing.

**Good Omens** by Terry Pratchett and Neil Gaiman is the perfect example of how you can be hilariously funny and have quite a lot to say all at the same time. Grand thoughts about the nature of good and evil can also make you giggle. The basic premise—What if the Anti-Christ were accidentally switched at birth and raised by a “normal” family?—is so clever and thought-provoking and scandalous.

**Harriet the Spy** by Louise Fitzhugh was the first book I loved enough to read the cover off of it. It taught me that the best stories are learned through eavesdropping and told from a distance, and the best friends are the ones that are slightly off-center. It creates a world populated by real, imperfect characters who each break your heart in their own ways.

**Naked** by David Sedaris showed me that making one’s self the butt of the jokes can move beyond simple jokes and selfish navel-gazing. Looking in the mirror, you reflect not just yourself but also what’s in the world behind you. Structurally, the short-story-with-recurring-real-characters format is a clear influence.

Finally, I remember Erma Bombeck’s *If Life is a Bowl of Cherries, What Am I Doing in the Pits?* at my grandmother’s house and reading it over and over while the adults droned on. Her writing is sneakily subversive and timeless. She showed that you don’t have to have plot twists or glamour to be meaningful: There is wonder and humor in the everyday, if you look properly.
Phase 2
- Process Main Installation
- Remove Cooling
- Barge Shift to Pole Counter - 10 days
- Public Committee to Second Floor - 10 days
- Pressure test - 5 days
- Finish inside - 5 days

Phase 1
- Second Floor Cooling - 15 days
- Process Main - 15 days
- Pressure test - 3 days
- Insulate APC/Building - 10 days
- Commissioning - 10 days
- Call Point/Scan - 10 days
- Floor Re-Plant - 10 days
WHEN A DUKE-LED RESEARCH TEAM WON a $300 million federal grant to help develop an AIDS vaccine in 2005, the global situation was looking grim.

Even as the epidemic largely disappeared from American newspapers, the number of people living with HIV, the AIDS virus, had climbed above 40 million for the first time. Sub-Saharan Africa was hit hardest: In Swaziland, a pregnant woman visiting a prenatal clinic had a four-in-ten chance of testing positive. But the disease was hammering vulnerable populations worldwide: unemployed Russians shooting heroin with dirty needles; Thai teens having unprotected hookups; Indonesian sex workers who feared getting arrested if police caught them with condoms. In the United States it was hitting young black gay and bisexual men, many of whom didn’t know they were infected.

Anti-viral medications kept many healthy. But the drugs were not universally available. And some officials were working at cross-purposes to the public health. South Africa’s health minister was urging patients not to take the medicines, which she called toxic, but instead to eat a diet of beets, sweet potatoes, and lemon skin. Uganda had curtailed the distribution of free condoms. And the U.S. government was pouring money into overseas abstinence programs that had little or no effect.
In 2005 alone, the United Nations and World Health Organization tallied 3 million AIDS deaths, including 570,000 children under fifteen. The two bodies jointly called for “great urgency” in wrangling the epidemic. “A vaccine to overcome HIV,” they declared, “is our most compelling hope.”

That summer, the National Institute of Allergy and Infectious Diseases (NIAID) cranked up its efforts to develop a vaccine. The agency, part of the National Institutes of Health (NIH), announced the winner of that seven-year, $300 million competitive grant: a single consortium of vaccine researchers from what would eventually become forty-three institutions. They would work together under a virtual umbrella called the Center for HIV/AIDS Vaccine Immunology. Heading the center would be physician Barton Haynes, director of the Duke Human Vaccine Institute (DHVI) at the Duke University School of Medicine.

The colossal award was a departure from the traditional system of giving smaller grants to individual investigators. “It’s big science in the way that the Human Genome Project was,” Peggy Johnston, NIAID’s top AIDS-vaccine official, said at the time. Haynes and some of his colleagues had argued that the old system wasn’t working: HIV is such a vexing virus, defying all the usual methods of vaccine development, that a breakthrough required a whole new approach and a focused, big-dollar effort. It needed a critical mass of scientists from different disciplines, striving together toward a unified goal. They, in turn, needed expensive infrastructure and enough flexibility to shift money around as their needs changed. They also needed the ability to share their data seamlessly, without the usual turf wars that hinder scientific cooperation.

This was not a consensus view. Even before the Duke-led consortium won the grant, others were disparaging the big-science approach. “When you don’t know how to solve a problem, putting all the resources in the hands of a very small number of people—even very capable people—is not the way to do it,” Michael Lederman, a professor of medicine at Case Western Reserve University, told the journal *Nature Medicine*.

That was fifteen years ago. Since then, Haynes’ team has won two more large NIAID grants: a total of $639 million distributed over twenty-one years ending in 2026. They have also received funding from the Bill and Melinda Gates Foundation. That and other money has allowed them to build a turnkey operation, capable of not just doing basic research but also manufacturing vaccine components and conducting clinical trials.

Haynes has also built something that’s harder to visualize but equally essential: a worldwide, multidisciplinary collaboration of scientists who cooperate as if they all belong to the same lab. “That structure is critical if what we want to achieve is the ability to take what we learn in a laboratory, and what we learn from testing clinical samples, and turn that into an idea that can be tested as a vaccine,” says John Mascola, director of NIAID’s Vaccine Research Center. “It is very difficult to build that capability from start to finish. So Duke is a fairly unique example of an academic center, especially in vaccinology, that is able to do this.”

The international group has spent almost fifteen years probing HIV to give up its secrets. They have learned what makes it such a hardy organism, impervious to the virus-fighting proteins called antibodies. And they’ve developed new strategies to outwit the virus. They now believe, as do others outside the consortium, that a vaccine could be within the imaginable future. It won’t eradicate HIV.
altogether, they say. But it could significantly slow transmission.

“I still think it’s going to be a formidable challenge,” says Anthony Fauci, one of the world’s leading AIDS researchers and director of NIAID. “But I think, within a reasonable period of time, we’ll get an HIV vaccine that is 50, 60 percent effective, enough to have a major impact on the kinetics of the epidemic.”

Fauci, who mentored Haynes before the epidemic began, predicts the Duke physician and his consortium will ultimately deserve credit. “You’re dealing with a superstar who is leading a very impressive group of people,” he says. “If we’re going to get a vaccine for HIV, it almost certainly is going to be all or in part by this group.”

Barton Haynes is a bearded, jeans-wearing seventy-two-year-old who is famous among peers for his tirelessness. “He doesn’t need any sleep,” says Kelly Soderberg, DHVI’s chief of staff. “He will be here seven days a week, and it’s not because he’s afraid something will fall between the cracks. He is genuinely invested in solving the problem.”

Raised in a small Tennessee town, Haynes describes his early life as a series of fortunate handoffs from one mentor to the next. He graduated from medical school in 1973, interned at Duke, and then started his research career at the NIH. He soon landed in Fauci’s lab doing basic immunology research. “He was showing signs at the earliest stage—the first two, three years of his career—of being someone who clearly was going to be a star,” Fauci says. “He’s intellectually brilliant. He’s very analytical. He’s extremely careful in his planning and his interpretation of the data.”

Haynes returned to Duke in 1980, this time as an associate professor. (He is now the Frederic M. Hanes Professor of medicine.) It was an important era for those studying the immune system. The following year, the government reported that previously healthy gay men were coming down with two rare and aggressive diseases: Pneumocystis carinii pneumonia and a cancer called Kaposi’s sarcoma.

Haynes’ professional interests made him a logical candidate to study this cluster of illnesses, which would eventu-
ally be identified as AIDS. In 1982, he received a call from Robert Gallo, a scientist at the NIH’s National Cancer Institute. “This is going to be the greatest pandemic in the history of humanity,” Haynes remembers Gallo saying. (Gallo, who went on to establish HIV as the cause of AIDS, recalls the conversation.)

Haynes agreed to help out. He and Dani Bolognesi, now a professor emeritus of surgery at Duke, joined a task force that Gallo convened. At home, Haynes joined with the University of North Carolina’s Hemophilia Center to study AIDS patients who had gotten infected after being treated with a clotting protein made from human blood.

Once HIV emerged as the culprit behind AIDS, Haynes and Bolognesi began working on a vaccine. “We all thought in 1984, after the virus was confirmed, that it was going to be just like Hepatitis B and other vaccines,” Haynes says—that is, a relatively straightforward endeavor. They would take the part of the HIV virus that protective antibodies target, manufacture a test-tube version of it, and inject it first into non-human primates and then into people. This would trigger the body to produce its own antibodies, ready to fight the real virus if it came along. “And we’d be done in two years,” he says.

Over two decades, the field tried numerous approaches. “None of the strategies worked,” Haynes says. “A lot of dead ends.”

HIV, it turns out, has developed myriad ways to fool our bodies. For one, it mutates like crazy, and our antibodies can’t keep pace. “It’s one of the universe’s best escape artists,” says Kevin Wiehe, an assistant professor in medicine and DHVI’s associate director of research. The immune system evolves quickly, too, in an attempt to overcome the virus. But “HIV seems to always be one step ahead,” Wiehe says. “It always wins.”

What’s more, as Haynes discovered, HIV has evolved to mimic its host—to appear “more human,” says Wiehe. “The immune system is set up not to attack itself, so it’s a very clever way for the virus to evade the immune system.”

Another evolutionary masterstroke: HIV infects the very cells that are designed to kill it. “As your immune system is making more cells to fight against it, it actually is creating more targets for infection,” says Kevin Saunders Ph.D. ’10, an assistant professor in surgery and DHVI’s director of research. The infected immune cells then die off, making it harder for the body to fight the virus long term. The die-off also impairs the body more generally, which is why people with AIDS sometimes develop fatal diseases like Pneumocystis, which don’t harm uninfected people.

Little surprise, then, that the early years proved disappointing. Haynes might have moved onto other professional pursuits if not for an overseas trip that reinforced his priorities.

By 2001, Haynes was chairing Duke’s department of medicine and wondering if he should shift his career toward administration. He was also running DHVI, which he and Bolognesi had cofounded and which at the time had just a few employees.

Some of Haynes’ HIV-research colleagues were working in Zambia, a landlocked country in southern Africa where one-fifth of the adult population was infected. Haynes wanted to set up collaborations there, so he joined a University of Alabama epidemiologist on a visit. It was his first time in a developing country, and it drove home the human toll of the epidemic.

Haynes visited an orphanage that housed some of the world’s second-largest population of AIDS orphans. He talked to community leaders who were trying to build schools for those children. At University Teaching Hospital, he talked to physicians as they made rounds. “We were seeing bed after bed of AIDS
patients for whom the only treatment was pain control,” he recalls. “And then going to the pharmacy—I have pictures of the empty pharmacy cabinets.”

He listened as doctors described the hope they placed in vaccine research. And he kept a journal. “This trip will turn out to have been the most important six days of my professional life,” he wrote. “It has helped find the perspective I needed—

medical conference in Banff, Canada, where she found that “researchers could talk about little else in between seminars, over drinks or at poster sessions.” Some argued that the world’s leading HIV scientists should be sharing the funds and focusing on different goals, rather than competing for an all-or-nothing award.

“Why shoot yourself in the foot by disqualifying 75 percent of the best re-

searchers?” said Neal Nathanson, then associate dean of global health programs at the University of Pennsylvania. Nathanson has since retired and declined to comment for this story. Three other past critics, including Lederman, didn’t respond to interview requests.

DHVI’s scientists insist that scale matters: It frees researchers from scrambling to pay for equipment or personnel. “When you don’t have to worry about those logistics, but you worry about the science, that’s when you can make progress,” says Saunders. “The large grants have propelled the field forward at the speed of the intellectual process. It’s not the speed at which you’re waiting for a piece of equipment, or the speed at
The blood serum of those 312, plus a similar number who had been infected for longer, produced a wealth of information. Researchers at the University of Alabama and Los Alamos National Lab made what Haynes calls an “astonishing” discovery: Even though an individual with HIV might have billions of variants of the virus in their body, when they infect a partner, it’s generally with a single virus particle.

“That was the first bit of good news,” Haynes says. “We don’t have to protect against every variant that’s out there,” but rather the smaller set that infect others. Since then, scientists at Duke and the University of Pennsylvania have isolated and studied these viruses.

One major goal of the Africa study was to identify those rare individuals whose bodies naturally made potent antibodies against HIV. Scientists call them “broadly neutralizing antibodies,” because they can stop many different strains of HIV from invading human cells. To find those individuals, David Montefiori, a professor of surgery at Duke, screened the serum of hundreds of African research subjects and classified them by the types of antibodies they produced.

Scientists then studied the genetic changes that took place in those who made the powerful antibodies, and those who didn’t. “We performed a large series of studies and asked, ‘What’s going on when the good things happen, and what’s going on when they don’t happen?’ ” Haynes says. From there, the science unfolded in layers.

When people do produce broadly neutralizing antibodies, it doesn’t happen immediately. Rather, it’s the product of a series of mutations: a years-long contest of genetic one-upmanship between the immune system and HIV. Haynes calls this “co-evolution” because the virus and antibodies evolve together, each reacting to the other’s changes.

One of the African individuals, who was first tested a month after infection, eventually developed broadly neutralizing antibodies. (For privacy, their nationality and gender are kept confiden-
“I’m very, very grateful.
I get up every day feeling how wonderful it is to have an opportunity to contribute.”

University, and elsewhere had coax ed the immune systems of mice and monkeys to produce broadly neutralizing antibodies. This is not the same as creating a fully working vaccine. But it overcomes a “major roadblock” by eliciting genetic changes in the antibodies that the body doesn’t want to make naturally, says Saunders, who (along with Wiehe) is one of four co-first authors on the paper.

To do this, the scientists relied, in part, on the genetic map from that same newly infected individual in Africa.

M anaging a research program of this scale was a new experience for Duke. There was so much to figure out: how to hit the spending targets with precision, how to comply with all the rules, how to make sure big-science coordination didn’t interfere with the serendipity and individual initiative that often drive discovery. “We had to learn as we were flying,” says Tom Denny, a professor in medicine and DHVI’s chief operating officer. His colleagues circulated a funny video of a commercial airplane soaring through the sky, filled with passengers, as workers bolted its body together.

Everyone was hyper-aware of the number of dollars at stake and the controversy surrounding the grant. “We had an incredible amount of visibility and accountability on us,” says Denny. “You had the NIH that gave money and wanted success. You had Duke that said, ‘Don’t mess it up.’ And then you had the science community saying, ‘You guys shouldn’t have this.’ So whichever direction you turned, there was pressure to make sure you got everything right.”

Some of the lessons came hard. Initially, DHVI contracted with private industry to manufacture the ingredients for clinical trials. “It was a disaster,” says Wiehe. “You think you’re going to get their A team working on your product. But you get the B team or the C team.” In one case, Denny recalls, DHVI hired a private company to make components for four vaccines. Six months later, the company came back and raised the price from $12 million to $25 million.

“What do you do when you’re building a house, and you’ve got half the house built, and you builder says to you, ‘Well, if you want to put a roof on it, the price is going to double?’ ” Denny says. “You’re too deep in the hole at that point.”

Something needed to change. DHVI needed its own in-house manufacturing capacity. Denny and Haynes secured $5 million from the medical school’s then-dean, Nancy Andrews, to build a sterile facility where vaccine components could be produced. “We had a lot of people saying, ‘You don’t know what you’re doing. You’ve never made product before. You’re academic scientists,’” Denny recalls. So he hired an outside auditor to review planning and construction, and then hired a specialized search firm to find experienced professionals to staff the facility.

According to Denny, the sterile facility has successfully made three products, possibly cheaper but certainly faster than private industry could have. It quickly proved too small. With federal and university funding, DHVI is now retrofitting its building to add four more manufac-

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took a year, he says, until his colleagues felt comfortable doing the same.

To this day, Haynes reinforces this spirit of collaboration at every large consortium meeting. "Welcome," he says. "This is a big lab meeting. If you hear anything that’s of interest, go to the person from whom you found it and collaborate. You cannot take it and run with it."

This is high-touch science. Data don’t just get handed off in written form; people sit down together and talk. Matt Johnson, a former drug-company researcher, now leads the manufacturing effort as DHVI’s senior director of product development. Every Wednesday morning, he and some of his managers attend laboratory meetings with Haynes and Saunders and look at their results. “If you were to go to a lot of pharmaceutical industry partners or other research environments, you would not see that connection of teams physically sitting together and looking at data,” he says. “We can provide them real-time feedback, and they can also ask us questions: ‘Hey, is this a feasible approach? Do you see any concerns as we take this toward a human trial?’ That cross-pollination is incredibly strong.”

If there’s any chance of forgetting what’s at stake in the quest for an HIV vaccine, that memory is rekindled when you enter the Duke Human Vaccine Institute’s headquarters. Hanging inside the atrium is a colorful panel from the AIDS Memorial Quilt, with individual rectangles recalling people who died in the 1990s. They include ten Duke pediatrics patients, one just three months old.

“There has never been an epidemic that has sustained the death rate that HIV has had, not in history,” says Larry Corey of the HIV Vaccine Trials Net-
STUDENTS TAKE DIFFERENT APPROACHES TO THE
The Carpenter Reading Room on the third floor of Bostock Library is an “absolute silence area” during even slow times of the semester. An overloud cough can generate a stare, an unmuted phone chime, defenestration—for at least the phone.

But during reading period in mid-December, the Carpenter atmosphere is so thick you can barely breathe. Anxiety hangs in the air like mist. Every table is full, as are most of the armchairs, usually in pairs, students stretched across. Every place at every table the same: computer, phone, piles of notes, pens, highlighters, at least one carryout cup of coffee. Photocopied sheets with highlighted lines in binders, spreadsheets on screens, maybe even a few actual books. And the students move from one to the next: screen, notes, book, phone, printout. Type. Read. Check. Type some more.

Reading week. Well, technically it’s not a week, though “reading week” rolls off the lips more smoothly than “reading period.” According to Duke archivists, it’s a period that has accordionied in length over recent decades, anywhere from a day to a few days, usually including a weekend. But the sense remains the same: a few days when classes have ended and finals haven’t yet begun. (For undergrads; graduate reading period is
longer, usually that full week.) A yawning period of nothing scheduled. The library is open twenty-four hours, food is on offer constantly, and all you have to do is study.

Or.

“You know,” says dean of students Sue Wasiolek ’76, M.H.A. ’78, LL.M. ’93, “I was a freshman in 1973, and I vividly remember the reading period. It was a time that my roommate and I baked cakes.”

Cakes.

“We would just have sort of this ongoing study break, where we would...we baked probably twelve, fifteen cakes, and we would decorate them and deliver them to our friends,” continues Wasiolek, familiarly known as Dean Sue.

So, okay. Maybe there’s another side to this reading period.

“My experience as a student and also as faculty in residence is that it’s also a time for students to take a deep breath,” says Wasiolek.

To that end, Duke Athletics puts on a “Paws for Exams” programs, bringing dogs to the K Center classroom for athletes to pet, which studies show lowers blood pressure and reduces muscle tension. The East Campus Marketplace offers “Tea-laxation” (free tea and relaxation); special sponsored study halls appear at places like the Nasher Museum; and various libraries, dorms, and other entities offer cookie breaks. The “Midnight Breakfast” at the Marketplace starts at 11 p.m. and has lines that stretch across the quad (this year it even ran out of T-shirts). DuWell, which takes an integrative approach to student health, sponsors coloring and meditation. Miniature therapy horses, which are actually a thing, visited Lilly Library in a “Stampede of Love,” and Wasiolek had a study break with dogs at her G-A apartment.

But even the breaks can raise stress, according to Alicia Santana, an East Campus residence coordinator. “They talk a lot about mixed messages,” she says. “The library is open twenty-four hours, but there are multiple study breaks.” Students seem to be asking, wait: am I supposed to be studying or breaking? Both, of course, and the students have opinions. Santana informally polled her resident assistants and students about reading period and found “for the most part they said students used Saturday and Sunday to just procrastinate, but then Monday and Tuesday they were stressed.” Overall, though, students respond as you’d expect Duke students to respond: “They’re just trying to have the right answer. Unfortunately, there is no right answer. You have to learn to time-manage.”

So we took strolls through campus during reading period to see this time management in action.

leaning over the wall of a carrel at which a friend is working on a computer on a desktop overspread with data sheets and printouts, senior computer science major Riley Cohen stands, stretches, and carries his paper cup of coffee with a plastic lid over to his own carrel. He’s a little wired: “I had a project due at 3 a.m.,” he says, smiling. “All the projects are due at 3 a.m.” in his computer classes, which at least keeps them from conflicting with other deadlines. Like for the project he’s working on, building an app that will filter songs according to more than just artist or genre but things like tempo.

As for the intensity of reading period: “It really varies year by year,” he says. “At the beginning of my time at Duke, I found work was less project-based, so reading week was sort of a crunch.” With four finals staring down at him, tension rose and stayed high. Now with a more project-based curriculum, each term “the hardest part of those projects is to find time when everyone is free and no one has class.” With the predictable result: “Ultimately, you end up putting it off and saying, ‘We’ll figure it out during reading week.’”

Which they then actually do. “It’s nice to be able to work uninterrupted: no classes, no little assignments due. You can just work uninterrupted.” Reading week has a clear end, after which everything is done for the term. “Whereas during the year, you finish one and you know another one is coming right at you. It’s a good feeling to work through it, and you have that clear goal in mind.” He estimates he’s sleeping seven hours a night and eating two meals a day. But the open area around the bridge between Perkins and Bostock is filled with people working on projects like his; the carrels and tables seem to embrace the printouts of comp sci classes. Even better, he tends to be working on projects with his friends.
I have some friends who have turned completely nocturnal.

At 8 p.m. the doors to the room off the entrance to Lilly Library open and a crowd of East Campus studiers pours in. They scavenge table after table stacked with cookies, chips, crackers, pretzels, candy. And fruit and veggies and dip, too, but… you know. Cookies and candy, much of it home-baked by the librarians and local members of the Duke Campus Club, which organized the study break.

The initial swarm returns to its studies, but periodically a new burst populates the room. “They sit down at their table, and someone says, ‘Where’d you get that?’” says librarian Lee Sorensen. “So they come in waves.” He describes his work with students during reading period as “library triage: things they should have been doing all semester they suddenly need.” He can help them figure out which of their information needs are solvable, and how to sort through priorities, always gently. “I’ve never in my career told a student they should have started sooner.” On the other hand, students, especially on East Campus, where freshmen live, are occasionally simply overwhelmed. “I’ve had people come up and say, ‘You have a student down there crying.’” Well, there are cookies and veggie dip. Will that help?

On the second floor, the Thomas Room is full, and students occupy every desk, chair, and table in the lounges and interstitial spaces throughout the library. At one table overlooking the information desk, Brian Anaya, a freshman premed, and Ying Yu, a freshman with a neuroscience interest, pick at their plates of cookies and think about reading period. “I’ve been here since 11 this morning,” Anaya says. “We took a break for about thirty minutes,” says Yu. “Just for cookies.”

This is reading period, and these guys are for it. “I like it a lot,” Yu says. “I know a lot of our friends say they feel antsy—because they know they should be doing something, but they’re not sure what. But I’m antsy when I don’t study. So making Lilly home for a day seemed like a good thing.”

Anaya agrees. “I don’t feel like I’d be able to study enough for finals without reading period. I honestly don’t think I could.” As for the unstructured time, “I wouldn’t say it’s cool, but it’s nice having a break. I feel, like, in high school I was more stressed about finals than I am now. I have so much more time to study, to be able to do anything. I’m doing a project I was supposed to be doing all semester. I feel like I’ve never been as productive as I’ve been today.” Fear is a great motivator.

Yu, on the other hand, is not only not catching up on a semester-full of missed work; she’s not even behind on her reading-period schedule. Which, yes, she has. “I have chem Thursday, neuro Friday, math Monday. So…” she blushes a bit, “I made a study plan.” She shows it off: calendar pages with each class given a particular color (math is blue; chem, yellow), and reading, problem, and study goals for each day.
“We took a break for about thirty minutes. Just for cookies.”

Where the stairwell between the first and second floors makes a 180-degree turn, junior biomedical engineer Simal Soydan and her friend Angie Lei (also a junior, and an electrical and computer engineering major) sit on the steps and gobble a quick dinner out of takeout containers. It’s midafternoon, so it’s kind of an odd time for…lunch? Dinner? Something?

“Yeah,” Soydan says, laughing. “Because we stayed up very late, and we can’t wake up early, so breakfast and lunch then shift.” No papers for these students: It’s four finals, so it’s nose in the book and no mistake during reading period. “I have four finals, and three of them are STEM,” she says. “They’re all cumulative, so I have to study each one all the way from the beginning.”

“Reading period changes for Trinity versus Pratt,” she says. Trinity students have papers and take-home exams, so they’re the ones watching movies and strolling the grounds as they think through their papers. Pratt students, especially in the early years, are grinding through practice problem sets. “I would prefer to have a paper and two finals rather than four. There is not enough time to study, definitely.

“We wish we had one more day” of reading period. They barely feel like they have time enough for everything. “That’s why we have our lunch way close to our study space” in the York Chapel in the divinity school. “Perkins is too crowded, and it’s hard to find a place.”

What about just studying at home? They live right next to each other in the Hollows, the new West Campus dorms.

“Math is a class we take together,” Soydan says. “We teach each other and talk, so we stay home.” Though that’s a mixed blessing. “We get too comfortable, and we stop working,” Soydan says, at which point “it’s better to come to the library. You get infected by the environment, and it kind of pushes you.”

Lei has something of a seen-it-all cast to her face. No romance left in reading week? “That might have been freshman year, when you glorify studying,” she says. “Because you were at a new school where everyone was so smart, and your best was no longer the best.

“But now, as an upperclassman, you just want to be through with it.”
The student hunkered down so jealously guarded his secret study place that he preferred to remain anonymous, so we will call him Sanders. This degree of protection indicates that the bottom floor of the divinity library, with its concrete floor, single row, along one wall, of carrels with industrial steel shelves, a barely padded office chair, and harsh fluorescent lighting must have some kind of special study qualities.

The divinity library is itself something of a maze, with stairways you cannot find connecting rooms at levels you did not know existed filled with books in languages you do not speak. The entire experience feels like something out of an M.C. Escher drawing, so merely finding the bottom floor clears out a lot of potential study-space competitors. “I discovered it last year,” says the senior policy major, as he studies for a neuroscience exam, “so it took some time.” Even the bookshelves require you to flick on light switches if you wish to peruse a stack, so a little carrel along the wall can feel like a ship at night on a silent, empty sea.

The basement’s general lack of comfort recommends it, he says. “I think that’s a deterrent for a lot of people. A lot of my friends don’t like to come here for that reason.” His own study practice “varies from semester to semester,” he says. “It seems to depend on the number of finals.” If he’s got a bunch of finals, “near the end it can be stressful.” If he’s had mostly essays that term, “it can be one of the most free times,” and he can be like Dean Sue, taking walks, breathing, baking cakes. “Then this is a period to decompress.” Not now, though. He turns back to his neuroscience.

Sophomore Shannon Smith, a mechanical engineering major, serves on the Honor Council and sits at a table full of tumblers, which council members are distributing to students as encouragement to stay hydrated. “Fill up for Finals,” signs say, and students seem to appreciate the cup. They need it, Smith says: “It’s right before finals, ‘near the end it can be stressful.’” If he’s had mostly essays that term, “it can be one of the most free times,” and he can be like Dean Sue, taking walks, breathing, baking cakes. “Then this is a period to decompress.” Not now, though. He turns back to his neuroscience.

Though not in a bad way. “Every single week you’re trying to get on top of the next week’s things,” and then suddenly you only have one last set of things to do, and a kind of relaxation sets in as you prepare. “It’s more recovery from the semester than preparation for finals.”

Sitting with Smith, Evan Liu, a sophomore probably majoring in biology, feels similarly. As a premed he’s got a couple of finals, a final paper, and one final project already done, so “honestly, it’s been pretty chill the last couple days.” He says he’s had a disciplined semester, and he doesn’t need to stretch on his finals to get the grades he needs, so he’s seeing more friends, attending breaks like the midnight breakfast, enjoying himself. “I’m getting more rest,” he says. Smith chimes back in. “So much sleep,” she says. “At least ten hours” a night. “It’s ridiculous.”

She’s not necessarily typical, though. “I have some friends who have turned completely nocturnal.”

Into the mix of students wedging their way into and out of Dean Sue’s apartment in Gilbert-Adams, a dog makes its way. “Oh my goodness, another one!” a voice shouts. “Hi! What are their names?” A student dressed as a Christmas tree

Sophomore Sarah Kate Baudhuin has rather a longer-termish look about her, and she explains. “Last year I spent pretty much all reading period here watching Hallmark movies with [Dean Sue],” she says. “We’d have tea, and she’s the brownie master.” She has fewer exams than papers, she says, “so I would hang around here and write. Do a portion, and then watch a movie.”

With her schedule driven by writing rather than by relearning subjects for cumulative exams, “I’ve been enjoying it. Just having this buffer period—just seeing campus in a more relaxed way.” This reading period is perfectly organized, she says: “I have four papers and one exam, and they’re due at staggered times.” She takes long walks, enjoys the feeling of campus. “During the busy-ness of regular semester, I don’t have the time to do that. [Now] I have time to explore, eat at new places.”

She’s at Dean Sue’s not for the dogs, though, or for any ancillary benefit the dogs might bring. “Dean Sue is a big enough draw,” she says. “I’m more of a cat person, myself.”

Divinity School Library, bottom floor

SCENE

In front of Rubenstein Library gallery space

SCENE

Dean Sue’s Evening With Dogs
Elizabeth Coffman ’87 won the Library of Congress Lavine/Ken Burns Prize for Film for her documentary Flannery, about American novelist and essayist Flannery O’Connor.

Deanna Okun J.D. ’90 was selected as managing partner of Adduci, Mastriani & Schaumberg LLP, the first change in leadership since the law firm’s founding in 1981.

Jonas Blank ’01 was promoted to senior vice president of business and legal affairs for NBC Universal Content Distribution.

Denise Schrier Cetta ’90, right, a producer for CBS’s 60 Minutes, was a recipient of an Emmy for The Legacy of Lynching, a documentary featuring Oprah Winfrey.

Wanisha Smith ’08 joined Duke Women’s Basketball as an assistant coach.

Christine Schindler ’15 and Dutch Waanders ’15 are featured in Time’s Best Inventions of 2019 list for their innovative technology PathSpot, a technical solution to foodborne illness.

Deirdre Stanley ’86 was appointed executive vice president and general counsel of Estee Lauder.

Daniel Jones ’18 was named starting quarterback for the New York Giants.

Shane Battier ’01 was inducted into the National Collegiate Basketball Hall of Fame.

Tracey Lesetar-Smith ’02 was named senior vice president, general counsel of NASCAR.

Valecia McDowell ’95, J.D. ’98 was named to the inaugural Lawyers of Color “Nation’s Best” list, which recognizes minority law firm partners and senior-level corporate counsel.

Have news to share about your achievements and milestones? Submit a class note and read your classmates’ latest news by logging into alumni.duke.edu.
Sterly Wilder ’83, associate vice president for alumni affairs, traveled to England, and remembers...

My recent visit to the **ROYAL AIR FORCE CLUB** in London was about a different kind of service. I was there with alumni and guests to hear from three of Duke’s current alumni **Rhodes Scholars**—Jay Ruckelshaus ’16, Kushal Kadakia ’19, and Clair Wang ’19. Did you know Duke recently had its fiftieth Rhodes Scholar named? To my delight, they were in conversation with Elizabeth Kiss. I’ve known Elizabeth for years; she’s the founding director of the Kenan Institute for Ethics and served on the university’s board of trustees for a dozen years. Now, she’s the CEO and warden of Rhodes House, the gathering place for the scholars on Oxford University’s campus.

Elizabeth led a fascinating discussion with the Duke scholars, first delving into the complicated history of the Rhodes and then giving an overview of the program now. The three scholars all have fascinating stories in very different disciplines, and Elizabeth’s interviewing skills highlighted each of their journeys. It was wonderful!

I left feeling, if not quite like a scholar, definitely a lot wiser.
MR. NICE GUY

As the president and CEO of Fred Rogers Productions, Paul Siefken has upheld and helped to burnish a lofty legacy.

PAUL SIEFKEN ’92 was terrified of the big shoes he would have to fill. Not the size nine, dusty blue sneakers that Mister Rogers always put on as he sang “It’s a Beautiful Day in the Neighborhood.” Something even bigger than that—Fred Rogers’ legacy. It was 2012, and Siefken, director of children’s programming at PBS, had just received a job offer from Fred Rogers Productions to head its production for a time and go on to be its next president and CEO.
Working in the name of Fred Rogers—songwriter/puppeteer/scriptwriter/scholar/beloved TV legend/very nice man—seemed daunting. Not only did Rogers change children's television by playing pretend to help preschoolers through their very real emotions—he was every bit as kind and genuine off screen. (If niceness were rated on a scale, there might be nice, really nice, and then Mister Rogers nice.) How could anyone possibly live up to that?

At PBS Kids, Siefken had helped with the development of *Daniel Tiger's Neighborhood*, an animated show and the first spinoff from the neighborhood. But accepting the offer would mean having Fred Rogers on his business card and producing new shows in the name of an American icon.

He called Lisa Henson, daughter of Jim, of Muppets fame, who had worked with Siefken on *Sid the Science Kid*. She knew what it was like to work in the shadow of a towering legend. “There will be days people will tell you that you are not doing it right. But you need to look past that and believe in the work you are doing and your own abilities,” he recalls her telling him.

He also listened to the wise words of someone he’d never met but always admired—Rogers always had the right advice.

“Listening to what Fred said, I only had to fill my own shoes,” Siefken says. “So people can like me just the way I am. That takes all the pressure off.”

But when Siefken tells people where he works, Pittsburghers start telling stories about meeting Rogers—in an elevator or maybe on the street—and how he was able to connect with them. “There’s a statue outside of Heinz Field [home of the Pittsburgh Steelers], and it’s not of Franco Harris,” Siefken says, referring to a Steelers legend.

Lately, he’s been hearing even more Rogers stories than usual, with the fiftieth anniversary of *Mister Rogers' Neighborhood*, a 2018 celebration that began with the documentary *Won’t You Be My Neighbor?* and included the best-selling biography *The Good Neighbor*. The year crescendoed with dozens of articles and columns and magazine covers with the kind face of everyone's favorite television neighbor staring out. Now the Mister Rogers lovefest has spilled over into a second year and third year with the feature film *It's A Beautiful Day in the Neighborhood*, starring another standup guy, Tom Hanks.

FRIENDS: O the Owl and Daniel Tiger join Siefken for a meeting.
Americans can’t agree on much these days, but everyone seems to look up to Fred Rogers. He stood for goodness and kindness and empathy, qualities that seem to be in short supply.

“It’s amazing,” Siefken says of the sustained celebration.

As president of Fred Rogers Productions, Siefken has overseen several anniversary projects, including a book of Rogers’ song lyrics for a new generation of youth who are rediscovering the TV host. He also helped plan an Emmy-nominated fiftieth-anniversary special for PBS stations, hosted by Pittsburgh-born actor Michael Keaton.

While he’s protective of the brand, more often, Siefken just sits back and lets the warm feelings about Rogers bubble up spontaneously. When a nurse at a Pittsburgh hospital decided to knit red sweaters for the newborn babies for World Kindness Day on November 13, photos of the babies went viral.

Siefken visited the hospital wearing a gray cardigan, one of the only times he has done so while on the job. “I don’t like to invite comparisons,” he says. True to his nature, he was off to the side during the press event, letting the cameras focus on Joanne Rogers, Fred’s widow.

On the tail of the frenzy, the company announced a new spinoff show, which will debut in the winter of 2021. Siefken and Ellen Doherty, the Emmy-award winning chief creative officer he recruited to the company, were batting around ideas for a puppet show based on the characters from the Neighborhood of Make-Believe back in 2016. They kept coming back to Donkey Hodie, the idealistic donkey à la Don Quixote who lives in a windmill. “We fell into giggles every time we saw Donkey Hodie,” Siefken says.

In the new preschool show about persistence, Donkey Hodie—the granddaughter of the original character now known as “Grampy Hodie”—is a little girl donkey who dreams impossible preschool dreams. Rather than slaying a dragon, she works hard to get over her fears, like the monsters she imagines in her room at night. Doherty has been working on the series with David and Adam Rudman of Spiffy Pictures.

Siefken reviews the scripts, but most of the time, he stays out of the way and lets the creative people create. “Ellen is ten times the producer I am,” he says.

Doherty, in turn, says, “I love working with Paul. He is a great colleague, and he gives me a lot of freedom and support and makes it possible to make great stuff.”

Siefken has a soft voice, earnest brown eyes, and short white hair. He’s a thoughtful speaker, often talking in full paragraphs with carefully delineated points. He doesn’t have the zany persona of some others in children’s entertainment.

But if you look around the office of the forty-nine-year-old
Siefken, it’s clear he is very much in touch with his inner child. As a child in New Orleans, he was a Mister Rogers kid who grew into a Sesame Street kid and then a Muppets kid. One day, his father took him to the carport, where they made Bert, Cookie Monster, and Big Bird figures out of wood and then painted them. “He helped me hold onto the show I loved,” says Siefken, the fourth of seven kids. All three of those Muppets figures are in his office, near photos of his wife and two teenage daughters and photos of Rogers. The Muppets occupy more prominent real estate than the twenty-three Emmys the company has won, some of which are on shelves inside a small side room.

Despite his love of educational TV, Siefken didn’t grow up thinking he would one day create it. As a teenager he worked at summer camp and decided he wanted to become a teacher. After graduating from Duke with a major in English, he went on to teach the subject at Chapel Hill High School.

About a year after graduating, he attended a party and met Anna Snowdon ’91, who had just come back from a stint with Teach For America. Siefken was the only person in the room she didn’t know, and, she says, the young man had charisma. In what sounds like a scene from a romantic comedy, they started talking, and three days later, she brought him to meet her mother. They dated for a year and met Anna Snowdon ’91, who had just come back from a stint with Teach For America. Siefken was the only person in the room she didn’t know, and, she says, the young man had charisma. In what sounds like a scene from a romantic comedy, they started talking, and three days later, she brought him to meet her mother. They dated for a year and

there he bonded with his colleague Linda Simensky, who was on the programming and development side of the business and worked her way up to become senior vice president of original animation. When he showed her some one-act plays he had written for his brother’s theater company, she was impressed. “I remember thinking the writing was really good and I would totally hire him to work for my department,” Simensky says.

He enjoyed marketing the story lines behind iconic cartoons. But one day, as a new father, he watched his daughter playing, and it hit him—maybe he could combine his love of kids’ TV with his teaching background. He applied to PBS KIDS in Washington, D.C., not knowing that Simensky had accepted a job there to develop new shows and oversee current series. Simensky immediately thought her friend Paul would be a perfect fit for her team. “I knew he could think creatively because he had written those plays. He was smart and interesting and worked well with others. Paul thinks in this three-dimensional way, seeing all the moving parts of a company.”

In his nine years at PBS KIDS, he worked his way up to director of children’s programming and worked with the producers to manage the development of shows such as The Cat in the Hat Knows a Lot About That, Sid the Science Kid, WordGirl, Fetch! With Ruff Ruffman, and Wild Kratts.

For Wild Kratts, he worked with Martin Kratts ’89 and...
his brother, Chris, on developing the concept of the show. Originally the two brothers came up with an idea of an animated show that featured the animals. But Siefken believed kids would miss the exuberant, animal-loving pair who had hosted *Zoboomafoo*, featuring a playful little lemur from Duke’s Lemur Center. “You guys, you are the stars of the show,” Siefken said. “You should make the show you always dreamed of.”

Their new concept featured a live-action intro by the Kratt brothers, leading to an animated version of the pair taking kids on animal adventures that humans never see, such as a battle between a giant squid and a sperm whale.

“**It’s nice to be at a place that is unapologetically earnest.**”

“It’s really great for the creative process when you can go back and forth. Paul is very smart and a creative guy,” Martin Kratts says.

The formula has been a winning one for the show, which has been on the air for nine years. “It’s their show,” Siefken says. “I just helped shape it.”

Siefken also collaborated on the development of *Daniel Tiger’s Neighborhood*, traveling to Pittsburgh to discuss the show with creator Angela Santomero and the team at Fred Rogers Productions. He would review scripts and talk about ideas for episodes.

The first episode was about Daniel’s excitement over his birthday, which turns to disappointment after he picks up his cake at the store and then drops it. Just as Rogers tapped the real emotions of preschoolers on his show, the Daniel spinoff explored themes such as disappointment.

“If you spend any time with a two- or three-year-old, you quickly realize they spend more time being something other than happy. It’s not all rainbows and parties,” Siefken says. “Preschoolers watching Daniel Tiger say, ‘He gets me. I get sad and mad, and I get angry.’”

Bill Isler, who was the first president and CEO of Fred Rogers Productions, was instantly impressed with Siefken and how he took Rogers’ legacy so seriously. He also had a good rapport with the creative team, and in the tight-knit world of kids’ TV, he had lots of contacts. Isler was planning to retire, and he wanted to make sure the company built out of one visionary’s imagination and talent would remain in good hands.

Of course, Siefken ultimately said yes to the job offer and worked as vice president of broadcast and digital media in 2013 before being named CEO in 2017.

Anna Siefken also made a mark in their new city, becoming the inaugural executive director of the Wilton E. Scott Institute for Energy Innovation at Carnegie Mellon University. She says she’s an extrovert to his introvert, and they have complemented and supported each other as they moved to different cities and jobs so they could both excel in their respective fields. “If we hadn’t met, our lives would be so different,” Anna says. “We made these giant leaps together.”

Siefken’s biggest leap, of course, was taking over the company that Fred Rogers built, a place where kindness is baked into the DNA. “It’s nice to be at a place that is unapologetically earnest,” he says. “Nobody is trying to be cynical or be cool or put on airs. We can really be ourselves, and that is really freeing.”

Though the community has welcomed Siefken, occasionally he runs into some people who second-guess his decisions for Rogers’ legacy. When Siefken and *Peg + Cat* creators Jennifer Oxley and Bill Aronson introduced the animated math show for preschoolers, a reporter balked.

“At first I thought, ‘You know, I knew Fred Rogers, and I don’t think Fred would make a show like this.’” Siefken replied. “Well, Fred didn’t make this show. Jennifer and Billy made this show,” Siefken replied. “It’s their vision.”

The person who knew Fred the best—his widow, Joanne Rogers—believes that Siefken is the right man for the job. “He’s almost as nice as Fred,” she says. “He’s kind to old ladies. He was brought up well.” During the crush of media attention over the fiftieth anniversary, the ninety-one-year-old Mrs. Rogers has been bombarded with interview requests, and Siefken, protective of her, tells her she doesn’t have to do them all.

Though Siefken never met his company’s namesake, Joanne says, “I think Fred would have liked Paul. I think Fred would be proud.”

Rouvalis is a Pittsburgh-based freelance writer whose work has appeared in *Parade*, AARP the Magazine, *Smithsonian.com*, and other magazines.
When this photo was taken, Lexy Lattimore ’14 was visiting her sister in Sydney, Australia, following a two-and-a-half-week tour with esteemed ballet company ProDanza in Havana, Cuba. Lattimore began training in classical ballet at eight and, after a few unconventional breaks, rediscovered the art in a Duke dance class. “If it weren’t for Duke and their incredible dance department, I would not be dancing professionally today...really, I wouldn’t be doing any of what I’m doing today if it weren’t for Duke,” she says. Lattimore is a recent recipient of the Cleveland Arts Prize 2019 Verge Fellowship, which gives awards to top regional artists who are emerging with great impact in their careers.
We are now approaching the 100th anniversary of the founding of Duke University in 1924. As we celebrate this milestone, it’s worth reflecting on how we came to have our two distinctive and beautiful campuses—and how different they could have looked.

About seven years ago, among a large group of rolled drawings in the University Archives, we discovered a plan made by the Horace Trumbauer architectural firm in 1923 or early 1924. In it, the then-existing East Campus is redesigned as an entire university. Imagine a chapel in the place Baldwin Auditorium stands today, flanked by the schools of law and divinity. This plan was made for “Mr. J.B. Duke” well before the announcement of The Duke Endowment, which suggests that he was thinking carefully about how Trinity College might grow into a larger university well in advance of his transformative gift. The buildings are packed closely, and this drawing does not include a hospital or school of medicine, both of which were of considerable interest to James B. Duke.

It must have become clear fairly quickly that there was not enough room on East Campus to realize all of the young university’s ambitions, and securing additional land around East Campus was challenging, given the residences and businesses already in place. Therefore, the university quietly acquired land to the west and south of East Campus—eventually over 7,000 acres. These many parcels of what was then mostly farmland became today’s West Campus and Duke Forest.

While the question of land was still undetermined, planning for the campus design continued. Presented with the unique opportunity to create a whole new campus from scratch, President William P. Few and professor and comptroller Frank C. Brown decided to take a road trip to various college campuses and keep a scrapbook of photos and notes about architectural design. The delightful document of their travels includes photos of campuses with Georgian architecture, the style that the East Campus would eventually take, and the Gothic architecture soon to be adopted for West Campus. One of the campuses visited was Princeton, and there are certainly some remarkable similarities between some Princeton buildings and some Duke buildings. This similarity may be why a rumor about James B. Duke originally wishing to give his money to Princeton has survived for decades. Despite the rumor being completely false, the similarities between Princeton and Duke's West Campus seem to breathe life into the story year after year.

With Few’s and Brown’s input about the desired aesthetics of the campus, along with James B. Duke’s vision, Horace Trumbauer and his chief designer, Julian Abele, created

Imagine a chapel in the place Baldwin Auditorium stands today, flanked by the schools of law and divinity.
possible campus layouts. The Abele Quad is now so quintessentially Duke it’s hard to imagine it being any other way, but the documentary evidence shows us it could have been many other ways, with not only different building layouts but alternate ways to approach the campus by foot or vehicle, and even a large body of water—likely at the suggestion of James B. Duke—behind the chapel.

One of the things we love most about our campus is the buildings and the sense of place they offer. Our carefully planned buildings and landscape create the visual harmony we experience on both campuses today. Thanks to the ambition and vision of leaders and architects almost 100 years ago, what began in the 1920s now carries us proudly into the next century.

Gillispie is the university archivist.
Even when published in book form, academic dissertations rarely get much attention. But “The Common Wind: Afro-American Currents in the Age of the Haitian Revolution,” which earned Julius S. Scott Ph.D. ’86 his doctorate, is the rare exception. After its completion in 1987, “The Common Wind” attracted interest from a few publishers. But Scott was not prepared to undertake the revisions that publishers and he himself felt were necessary.

So, Scott went off to teach at the University of Michigan, and his dissertation went onto the shelf. Unlike most such works, however, “The Common Wind” didn’t stay there. Instead, it went on to become an underground history sensation based on handed-around photocopies and PDFs. Titled after a Wordsworth sonnet about doomed Haitian revolutionary Toussaint L’Ouverture, “The Common Wind” is impeccably researched and written. It has gained a stellars reputation over the years, enough to be the subject of a 2008 conference at Michigan. Last year, Time magazine included the still-unpublished work in a list of “9 Books to Read for Black History Month.”

Finally, three decades after Scott finished “The Common Wind,” the book publisher Verso contacted Scott about putting it into print for real. Yet his initial impulse was to decline the offer.

“I was talking to them on the phone and saying, ‘No thank you,’ ” Scott recalls. “That’s when my partner asked me to put down the phone and said, ‘Look, your parents and other people in your family would be really proud to have this out. So why don’t you just go ahead?’ So, I said okay, reluctantly and with some skepticism. But I’m glad I did because it’s done well.”

Indeed, it has. Since its November 2018 publication, The Common Wind has earned plaudits, including the MAAH Stone Book Award—a $25,000 prize for “an exceptional adult nonfiction book written in a literary style.” Scott and his book were feted this year in February at Duke, with a conference bringing together graduate students from his time on campus.

“It has felt vindicating, although I never thought of it as a lesser thing because it hadn’t been published,” Scott says. “It was just this extraordinary thing that was kind of famous.”

A native Texan, Scott did his undergraduate studies at Brown University. Wanting to return to the South for graduate school, he came to Duke intending to study the history of the nineteenth-century South. But classes at Duke rekindled his long-held interest in Haiti enough for him to take on an unusual aspect of its history: tracking how information changed hands among slaves, sailors, and freed blacks during the 1791-1804 Haitian Revolution.

Peter H. Wood, Duke professor emeritus of history, served as Scott’s adviser. He admired his student’s ambition in taking a leap of faith that enough information and documents were out there to support his research. It turned out there were, although it took a lot of time, work, and travel.

“To be a historian takes a combination of literary and imaginative skills and the ability to do difficult archival research with patience and determination. He needed to learn Portuguese for this, so he did. More than anyone I know, he set his sights high. Books this good don’t come along very often.”

Scott has endured a series of health problems since finishing The Common Wind, losing both legs and most of his eyesight to Type 1 diabetes. He has to undergo regular dialysis treatments, which take up enough time that he can no longer teach. So, he is essentially retired at age sixty-four. But his one published book has had enough long-term impact, before and after publication, to stand as a major accomplishment in the field.

“I’ve been thinking about some things I’d like to do in adult education to maintain a teacher-student relationship because I enjoy that connection. I’ve got to figure it out,” he says. “But people ask if I’m gonna do another book, I’m not sure that can happen. All this attention after so long was nice.”—David Menconi
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Michael J. Wagner B.S.E.E. ’48 of Bradenton, Fla., on Nov. 11, 2019.

1950s
Marjorie Tyler Bargegon ’50 of Birmingham, Ala., on July 13, 2019.
Joe C. Beam ’50 of Celebration, Fla., on Nov. 9, 2019.
Weldon B. MacDonald ’50 of Williamsburg, Va., on Sept. 11, 2019.
Rebecca Burrum Matlock ’50 of Booneville, Tenn., on Nov. 9, 2019.
Jane Walton Vaden ’50 of Savannah, Ga., on July 7, 2019.
John F. Bell M.S. ’51 of Corvallis, Ore., on Nov. 16, 2019.
Dorothy Spencer Harward ’51 of Durham, on Oct. 28, 2019.
Joan Tate Van Horne ’51 of Poway, Calif., on Aug. 29, 2019.
Mary Coleman Logan ’52 of Toano, Va., on Aug. 13, 2019.
Dudley M. Norton ’52 of Williamsburg, Pa., on July 30, 2019.
Virginia Daniels Baker ’53, B.S.N. ’76 of Raleigh, on July 2, 2019.
Carol Hampe Bentley ’53 of Perryville, Ohio, on Oct. 20, 2019.
Margaret Bishop Fullerton ’53 of Fresno, Calif., on Aug. 28, 2019.
E llen Hennessey Heiler ’53 of Transylvania County, N.C., on July 18, 2019.
Clarence E. Howard ’53 of Lillington, N.C., on Aug. 12, 2019.
Julia Ling ’53 of Durham, on May 28, 2018.
James P. Farber ’54 of Middletown, Md., on July 25, 2019.
Louise E. Friend M.D. ’54 of Monterey County, Calif., on July 12, 2019.
Alfred E. Kerby B.S.E.E. ’54 of Toano, Va., on Nov. 10, 2019.
Martha Anderson Meunier ’54 of Charlotte, on July 17, 2019.
Frank S. Wamsley ’54 of St. Louis, on July 1, 2019.
Elizabeth Calkins Davis ’55 of Pullman, Wash., on Sept. 22, 2019.
Jane Walton Vaden ’50 of Savannah, Ga., on July 7, 2019.
John F. Bell M.S. ’51 of Corvallis, Ore., on Nov. 16, 2019.
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Elizabeth Calkins Davis ’55 of Pullman, Wash., on Sept. 22, 2019.
Carl E. Bents ’56 of Savannah, Ga., on July 29, 2019.
Carole Killian Clauss ’56 of Stratford, Conn., on Oct. 21, 2019.
George W. Paulson M.D. ’56, H ‘59 of Columbus, Ohio, on July 25, 2019.
Richard T. Shankweiler J.D. ’56 of Fort Lauderdale, Fla., on Oct. 9, 2019.
Joan Earle Condoret ’57 of Chapel Hill, on Aug. 12, 2019.
Robert F. Richards ’57 of Seven Fields, Pa., on Nov. 6, 2019.
Thomas T. Wright ’58 of Pittsburg, on July 2, 2019.
Elizabeth Register Davis ’59 of Winston-Salem, on Oct. 19, 2019.
Chester S. Gilz Jr. ’59 of Lyndhurst, Ohio, on Sept. 1, 2019.
Elizabeth McBride Short ’59 of Auburn, Calif., on Oct. 9, 2019.
Herbert A. Taylor III ’59 of Memphis, Tenn., on Sept. 6, 2019.

1960s
Gail Foster Kirk ’60 of Frederick, Md., on July 1, 2019.
Michael B. McGee ’60 of Montrose, Colo., on Aug. 16, 2019.
Vernon H. Rochelle ’60 of Morehead City, N.C., on Aug. 15, 2019.
Kenneth J. Swisher M.F. ’60 of Fayetteville, Pa., on Nov. 20, 2019.
Roswell F. Vaughan III ’60 of Houston, on Oct. 18, 2019.
Hugh E. Jones A.M. ’62 of Chambersburg, Pa., on Nov. 10, 2019.
Gail R. Williams M.D. ’62 of Pike Road, Ala., on July 14, 2019.
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Wilhelmina M. Reuben-Cooke
Benton H. Box
James F. Bowman
William J. Baggs
Stephen J. Wilson
Roger Waters
Dianne Komminsk
Lanny L. Hiday
Harold L. Davison
Louis H. Woodard
Martin M. Oken
Elaine Mozer Kauvar
Judith Ewell
Andrew Q. Blane
C. Neal Andrews
M.Ed. ‘65 of Wilkins Township, Pa., on Sept. 3, 2019.
Lois R. Allen
‘64 of Phoenix, on Oct. 27, 2019.
Thomas H. Melton
Richard C. McMillan
Ted L. Lightle
Elson T. Harmon
A.M. ‘64, Ph.D. ‘73 of Bar Mills, Maine, on July 18, 2019.
M. Julian Duttera Jr.
Laura Carver Woodworth
‘63 Hancock, Mich., on Nov. 13, 2019.
M.S. ‘64 of Lexington, S.C., on Sept. 5, 2019.
‘64 of Staunton, Va., on Aug. 19, 2019.
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May 15-23

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While Henock Asaye was born and raised in Las Vegas, his sense of home and community extends much farther away. Henock’s parents emigrated from Ethiopia before he was born, leaving a country wracked by decades of civil unrest—but also family and home. Ethiopia remains a central component of Henock’s family network, identity, and ultimately his life’s ambitions.

Growing up in the shadow of the glitz and spectacle of the Las Vegas strip, Henock was keenly aware of how resources were distributed. His public schools were consistently funded at some of the lowest rates in the nation, with accordingly low rates of graduation. Henock did well in school—partly driven by a conviction to make his family proud but also simply to move away from the pervasive lack of resources he saw at school. When he was accepted to Duke, he imagined pursuing a pre-med track and becoming a doctor. Henock wanted to help people, particularly those with limited means.

Once at Duke, however, Henock quickly realized that he didn’t actually want to become a doctor. He could potentially do more good in the world by shaping health policy. Working in the global health field also connected his Duke experiences with his ancestral home of Ethiopia. With some advisors and friends, he set up a non-profit to take surplus medical supplies from Duke to rural hospitals in Ethiopia, where those extra items might be desperately needed. He was awarded a Kenan Summer Fellowship to better understand the ways in which rural doctors in Ethiopia distributed the resources Henock’s organization made available to them. When there wasn’t enough, how did they prioritize and ration care?

Upon returning to campus, Henock connected with Citizenship Lab, part of the Kenan Refugee Project focused on working with resettled refugee youths in Durham to build the capacity to advocate for what need in their new home city. Henock found that having new experiences in different cultural contexts guided his career trajectory. “My thoughts about careers in international development has changed over the years. The balance between both acting in the best interest of a country and making a profit has always been an uncomfortable ethical hurdle.”

In the spring, Henock enrolled in the Kenan Purpose Program in order to have a space to think about his next steps. He wanted to continue to be involved with development work in Ethiopia, but his work in Durham had also made clear that healthcare wasn’t necessarily the vehicle for doing good work for him. For his Kenan Purpose Program Summer Fellowship, he went back to Ethiopia but focused more on the policy side of healthcare. In addition, he filmed a documentary capturing the scarcity of resources faced by many hospitals in Ethiopia.

Going back was clarifying. His return to Ethiopia allowed him to solidify connections made the previous summer. At the same time, he was covering similar terrain from a new perspective, working to compile a report on the state of rural healthcare in Ethiopia. This more policy-oriented approach allowed him to see how potential technological innovations could make a huge difference in the lives of many in rural Ethiopia. He hopes to leverage business, non-governmental, and governmental sectors to make some ambitious ideas a reality: “By working with locals to provide technological changes—using drones to distribute equipment, instant messaging services for immediate supply needs, or building medical manufacturing plants throughout the country—we can expand how the country does business.” To bring some of those proposals to fruition, Henock will continue to expand his skills in international development and business, all with an eye towards improving lives of millions of Ethiopians.

“Don’t know where to go next. Know why.

The Kenan Institute for Ethics — a “think and do” tank committed to address real world ethical challenges facing individuals, organizations, and societies worldwide — helps students like Henock find their passion and forge meaningful paths beyond Duke.

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The balance between both acting in the best interest of a country and making a profit has always been an uncomfortable ethical hurdle.”

"The ability to reconnect with my cultural heritage - to instill systematic change through Kenan - has allowed for me to gain a greater perspective on the importance of becoming a global citizen.”
A LOOK AT STUDENT PROJECTS AS THEY DEVELOP

**AS A MAJOR** in both computer science and visual arts, I had been eager to design a project that merged these two fields through the use of machine learning. I quickly gravitated toward doing a black-and-white relief print and then experimenting using other mediums in combination. I decided to use colored screen prints layered underneath the relief prints and high-resolution scans processed by generative machine-learning algorithms to create new versions to display alongside the original print. Each of these generated images will highlight the use of different styles to convey the same content, hopefully highlighting different emotional aspects of the prints to create a unique experience.

After I finalized the process, all that was left was to choose a subject. I wanted something that was innately emotional and dramatic. So, I looked through a few museum catalogues and quickly became enamored with many of the depictions of biblical scenes by artists of the late Middle Ages, Renaissance, and Baroque period like Giotto, Sebastiano del Piombo, and Caravaggio. I wanted to do my take on these biblical scenes through an extended metaphor derived from Luke 12:27-28, which describes the beauty of flowers, and draw an analogy between the beauty of the flower and the amount of love God has for humans. I decided to do a series of prints that feature seemingly innocuous scenes of flowers that still depict the dramatic emotions inherent to the Bible.

Hand-carved relief prints take a lot of patience and time, especially when working on larger scales. I started by creating digital sketches of each of my five prints and then began the tedious process of transferring the images onto the linoleum before I could start carving. Although it’s not a short process, and I’ve ended up with far too many nicks and cuts on my hands to count, I’ve found few things as satisfying as peeling back the sheet of paper from my relief block to reveal my first print, fresh off the press.

**FLORAL:** Above, linoleum image of “The Ascension,” below, “Noah’s Ark” print
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