

HELIX

FALL/
WINTER
2025

VOL. 06
NO. 03

THE MAGAZINE
OF ROSALIND
FRANKLIN
UNIVERSITY

THE
STRESS
ISSUE

Stress and Your Heart

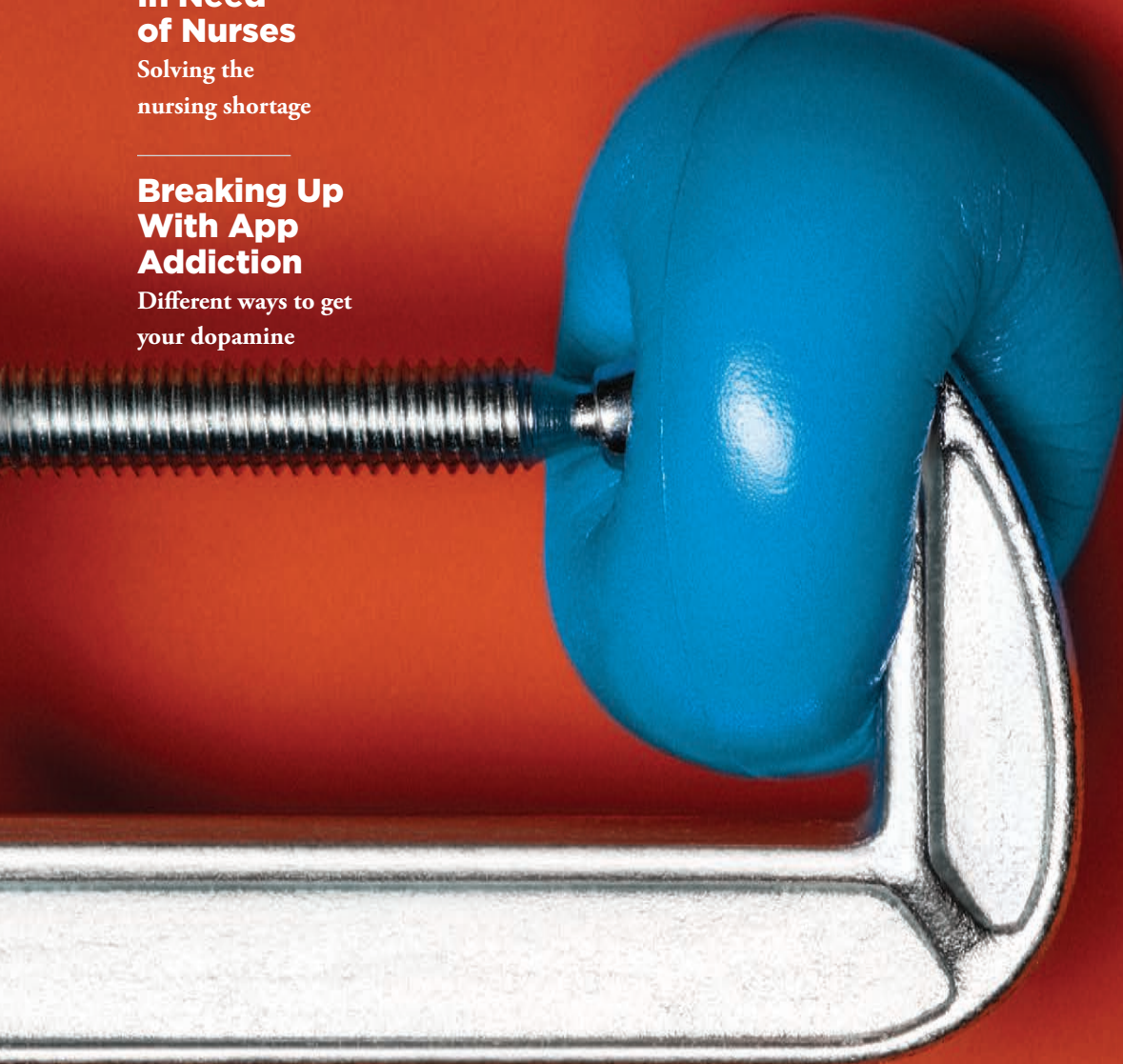
When the weight of
the world becomes a
cardiovascular crisis

In Need of Nurses

Solving the
nursing shortage

Breaking Up With App Addiction

Different ways to get
your dopamine



ALSO
INSIDE

THE BITE OF
MICROAGGRESSIONS

THIS IS YOUR
BRAIN ON STRESS

STOPPING MENTAL-
HEALTH STIGMA



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ROSALIND FRANKLIN UNIVERSITY *of* MEDICINE AND SCIENCE **EMPOWERING SCHOLARS**

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THE STRESS ISSUE

IF YOU'RE NOT STRESSED, you're likely not paying attention. From large existential threats to small everyday annoyances, stressors affect our health and well-being in well-documented and not-so-well-documented ways.

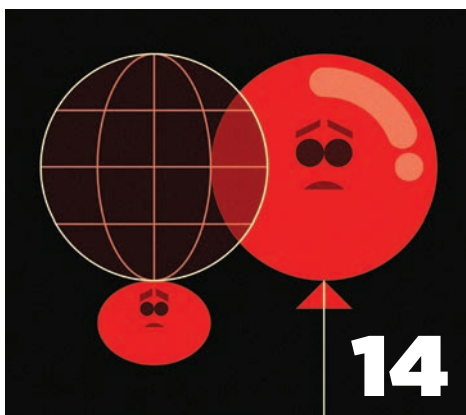
In this issue of *Helix*, we look at the causes and effects of stress on our bodies and minds and communities and ... well, everything. We also include some ways to combat the negative consequences of stress — origami star or therapy dog, anyone? — as well as new ways to look at its sometimes-surprising positive aspects.



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HELIX

THE STRESS ISSUE
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**PRESIDENTIAL
TRANSITION**
Please see page 43 for
an introduction to our
incoming president,
Dr. Aron Sousa.



Our North Star

AS I PREPARE to step away from this role, I do so with a full heart and deep gratitude. Serving Rosalind Franklin University — as a faculty member, dean, vice president, provost and president — has been the honor and the work of my life. RFU is more than a place of learning. It's a living promise to our students, our partners and our community.

Transitions bring change. But some things won't change: our mission, our values, our commitment to improve health and well-being, and our desire to be good partners. Those remain our North Star. Our values — collaboration, excellence, innovation, integrity, justice, respect and scholarship — will endure and guide the university's next chapter.

I'm proud of the work we have done together. We've grown programs that help meet the healthcare needs in our region. Our new College of Nursing is thriving. We're expanding into programs such as adult gerontology acute care and speech-language pathology. These are not just academic programs; they are bridges into the community, where our graduates will serve their neighbors, often in the very places they call home.

Our efforts have diversified the workforce and created new opportunities for students from all backgrounds. We continue to adapt to educate health and biomedical professionals for a future where our humanity thrives alongside scientific advancement and innovation.

That is the kind of progress I believe in. That's the kind of change that lasts.

We are steering through a complex time in higher education. From the ethical development and use of AI, to shifting policies and financial pressures, we face real challenges. But opportunities are also emerging. If we lead with our values and stay focused on collaboration, wellness, access and equity, we will continue to flourish.

Our community trusts us. We've earned that trust through a vision grounded in partnership, innovation and service. I take pride in knowing that a spirit of shared stewardship — among our faculty, staff, students and partners — will continue to guide RFU into a brighter future.

Thank you for sharing this journey with me.

—Wendy Rheault, PT, PhD,
FASAHP, FNAP, DipACLM,
president and CEO

S T R A N D S

Science and
everyday life
cannot and
should not
be separated.

—DR. ROSALIND
FRANKLIN





HANDS ON

Won't You Be My Neighbor?

RFU partners with Lovell FHCC to care for veterans and military members

RIGHT NEIGHBORLY
Dr. Bharathi Swaminathan examines a patient at Lovell FHCC.

PHOTOGRAPH:
MAX THOMSEN

ROSALIND FRANKLIN UNIVERSITY and Captain James A. Lovell Federal Health Care Center (FHCC), our nation's first fully integrated federal healthcare facility, are neighbors in every sense. We sit side by side in North Chicago, bound by more than 50 years of academic and clinical partnership. RFU provides cutting-edge education and research, while the FHCC, which serves both veterans and active-duty military and their families, offers real-world clinical

training environments and patient care. We share a common vision for innovation in health care and improvements to patient care and community health.

As both a physical medicine and rehabilitation (PM&R) physician at FHCC and a clinical educator at Chicago Medical School (CMS), I've dedicated my life to helping survivors of traumatic injuries reclaim their function, their independence and, often, their sense of self. My specialty practices at the intersection of body and mind. What sets us apart is that we don't just focus on the injury — we focus on the person. We orchestrate a whole team, guiding rehabilitation with a holistic, integrated approach that looks at everything from physical recovery to mental wellness.

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A lot changed in 2007. A directive came down from Washington as veterans started coming back from Iraq and Afghanistan with a multitude of symptoms. No one knew where to send them. Neurology? Psychiatry? Primary care? Eventually, the VA recognized that PM&R needed to lead the charge. We've been doing that with help from CMS' PM&R fellowship, residency and summer research internship programs.

PM&R is a good fit for the VA, which uses the Whole Health approach, proactively optimizing well-being by considering a person's physical, mental, emotional and social health. Instead of asking, "What is the matter with you?" we ask, "What matters to you?" We empower them to take the driver's seat, and we include the family as part of our team.

One patient still stands out to me. He came in with what initially sounded like a straightforward case: mild traumatic brain injury (mTBI). He had headaches and trouble sleeping — common

complaints post-deployment. We scheduled a thorough one-hour intake, part of our standard approach, which includes a deep dive into their full history.

The patient was under immense stress — trying to support a young family, struggling to build a new side business, and facing a cultural and communication gap with his wife, an immigrant from the Philippines. He said something that made me freeze: "I make bombs in the basement."

That moment demanded immediate, coordinated action. I stepped out, contacted psychiatry, and together, we decided the safest course was to personally walk him over to mental health. Fortunately, in the VA system, we have direct access to psychiatric care. If our patient hadn't agreed, our crisis team would have stepped in. But he did agree. He understood I wasn't passing him off, that I was walking with him.

Today, he's thriving. He still takes part in our comprehensive team, which, in addition to PM&R, includes neuropsychology,

social work, pharmacy, speech pathology, audiology, physical therapy and neurology. He still deals with mTBI-related issues, but we've narrowed the long list of complaints down to manageable pieces. He now has three children, one of whom recently joined the Marine Corps. He's a proud father and a proud veteran, and we're proud to walk this journey with him.

We follow up regularly — every three months. Our social worker calls. Our psychologist checks in. It's more than routine care. It's a relationship. As our CMS PM&R residents and fellows learn, that's what makes the difference. The trust. The continuity. The message we give every patient: "We are here to care for you."

Because we're not just treating injuries — we're restoring lives.

—**Bharathi Swaminathan, MD**,
chief of research and former department
head of physical medicine and rehab
services for the FHCC; Chicago Medical
School discipline chair and associate
professor, PM&R; EMG/TBI fellow-
ship director; and site director, PM&R
residency program

MARKERS

NEW DMS DEGREE IN COLLEGE OF HEALTH PROFESSIONS

RFU's new online doctor of medical science (DMS) degree is designed to expand opportunities for practicing physician assistants (PAs).

"Our doctor of medical science degree is an opportunity for advanced practice providers who want to help shape the future of

their profession, improve health equity and access, and transform the delivery of care," said College of Health Professions Dean Lisa Dutton, PT, MS '93, PhD. "It builds on the strengths of our top-rated Physician Assistant Practice Program and our institution, which is at the forefront of interprofessional education and collaborative practice."



ON COURSE

Interactive Interprofessionalism



HIPS 515 is co-taught by Robin Dyer, MD, OTR, CHSE, MS-HPE, an assistant professor at Chicago Medical School. A beloved professor, she is also one of RFU's newest graduates, having earned her MS in health professions education in 2025.

ILLUSTRATION:
ALISON SEIFFER

TAKEN BY ALL first-year health professions students at RFU, HIPS 515 Foundations for Interprofessional Practice is known for its dynamic, interactive learning opportunities. With class sizes topping 500, students create small, course-long teams from different disciplines to tackle assignments. Half the course is spent working within these teams to take on group projects that build better understanding among professions.

The remaining course time is devoted to in-person speakers and themes. Programs have included a discussion of the social determinants of health with the director of the Lake County Health Department and training on the use of naloxone, or Narcan, for overdose

prevention. RFU President Wendy Rheault, PT, PhD, FASAHP, FNAP, DipACLM, presented on compassion, empathy, shared decision-making and teamwork — all tied to interprofessionalism and health-systems science. A participatory podcast session with “Docs Outside the Box” let students chat live with the hosts about the impact of debt and the importance of money management for health professionals.

HIPS 515 is designed to incorporate the quadruple aim of health care: improving patient outcome, cost efficiency, health-care team wellness and population health. It does so in a multifaceted approach, with an emphasis on human connection.

—Margaret Smith

SCRIPT

Take 5 to Alleviate Stress

We all know too much stress negatively affects our health and well-being. With stress levels rising, here are five tips to help you cope:

1 **BREATHE:** Deep breathing is one of the best ways to immediately relieve stress. Consider starting a regular practice so you can call upon that skill when you need it most. If you have never done this before, see the American Lung Association's breathing exercises guide to ensure you learn this skill.

2 **MOVE:** Physical activity has numerous benefits, and stress relief is one. Any kind of movement — walking, strength training, playing sports — can combat the increases in cortisol and inflammation generated by chronic stress. Pair activity with time spent in nature or with people you enjoy to help boost stress-relieving impacts and keep you moving.

3 **DISENGAGE DAILY FROM DOOM SCROLLING:** Social media offers the potential for a nonstop onslaught of negativity. Consider strategies such as turning off notifications, limiting social media use to

certain times of day or for a specific length of time, or purposefully curating a feed with social media accounts that facilitate joy. Perhaps adding more dog influencers to your feed?

4 **IDENTIFY SOURCES OF STRESS:** Take time to understand what is causing your stress. Sometimes the answers are obvious (an upcoming deadline, changes at work, family crises), but if you find yourself constantly feeling run-down and on edge, and you are unsure why, try to process what is contributing to you feeling stressed. Awareness is the first step.

5 **SEEK SUPPORT:** Friends and family can provide assistance in combating stress — when we let them know. Tell someone you care about how you are feeling. Just the act of telling someone what you are struggling with can be helpful. If you do not find relief from anything you are trying, consider psychotherapy. The American Psychological Association has guides for finding a good therapist.

—Kristin L. Schneider, PhD, FSBM,
professor and chair of psychology and
associate dean of research, RFU College
of Health Professions



ON CALL

PHOTOGRAPH:
MAX THOMSEN

INTO THE FOLD

WHAT STARTED OUT as a simple study activity in the Boxer Library blossomed into a five-month craft project. Nine first-year pathologists' assistant students folded more than 10,000 origami lucky stars, filling 12 jars.

"Some people chew gum when they study or incorporate concentration strategies," says Nia Taylor, CHP '26, who made her first star out of curiosity. "This is what we did, just twiddled our fingers while we studied to help keep us on task."

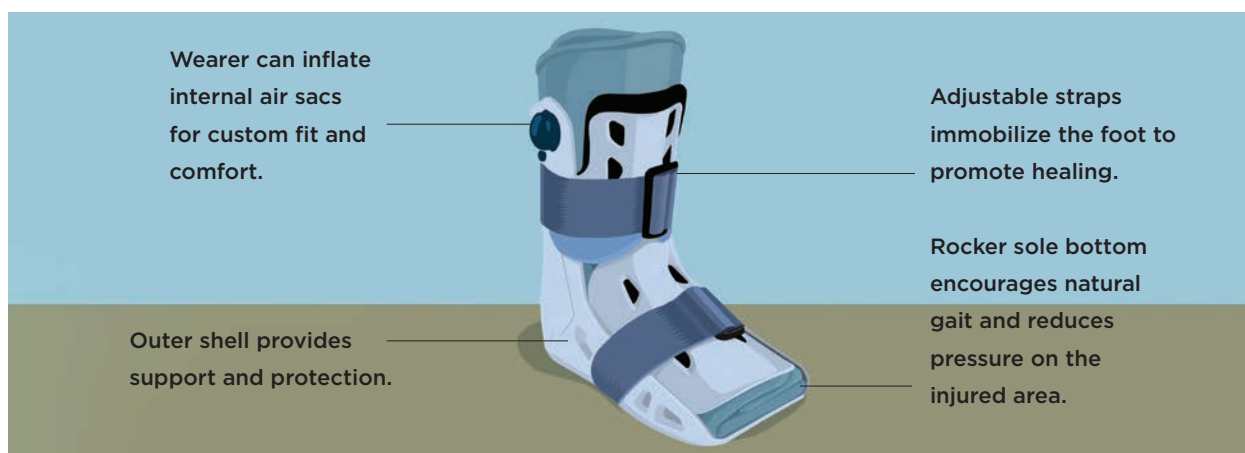
As part of RFU's Wellness Weeks, when students receive resources and materials to enhance well-being, the library staff gave out star paper and instructions to make the tiny creations. The project quickly became a collaborative effort that accompanied the group of friends through midterms and class assignments, offering stress relief and reflecting the dexterous skills required in their program.

—Sabreen Alfadel



Scan the QR code for instructions, then cut along the dotted line to decompress and make your own paper star.





This Boot Is Made for Walkin'

ILLUSTRATION:
ALISON SEIFFER

I SPENT SIX WEEKS in a boot one spring. Not something stylish in leather or suitable for hiking Yosemite. It was hard plastic, thick soled, light gray, up to my mid-calf. Think Frankenstein meets Luke Skywalker footwear, with a soccer player's shin guard for good measure. It was a walking boot prescribed by my podiatrist (a Scholl College alum, of course) to heal a stress fracture in my right foot. I had no idea what to expect. And I thrive on knowing what to expect. So, more stress. Anxiety 1, Sara 0.

The fracture was painful, but it was the boot, itself, that stressed me out the most. It really grated my cheese. Things I did without thinking, such as climbing three flights of stairs to my apartment or rounding the corner through a doorway (sorry, toes!), required advanced planning. So did driving. It was: boot on, slowly descend the stairs, get in car, boot off and sneaker on, drive, park, shoe off and boot on, out of the car, and do it all again in reverse to go home. I had to limit climbing up and

down stairs, so lugging groceries was out. I love grocery shopping. The online grocer's little green truck and brawny delivery person were a welcome sight.

It was eye-opening to me to realize how something so small and localized in a foot could affect so many other parts of life. I came to respect the boot: It was exactly what I needed to heal, and compliance paid off. If you ever find yourself in my shoes, er, boot, feel however you need to feel about it. Just keep the boot on. —Sara Skoog

POP

NATALIE PORTMAN AS DR. ROSALIND FRANKLIN IN NEW MOVIE

Photograph 51, a movie about Dr. Rosalind Franklin starring Oscar winner Natalie Portman, is coming soon from Tom Hooper, director of *The King's Speech*. Anna Ziegler is adapting the script based on her play.

"Shining a light on the extraordinary Rosalind Franklin, who made the invisible visible with DNA, and then was rendered invisible by her male colleagues and competitors, is a compelling story of science, rivalry, betrayal and redemption I am passionate to tell," Hooper told *Deadline*.

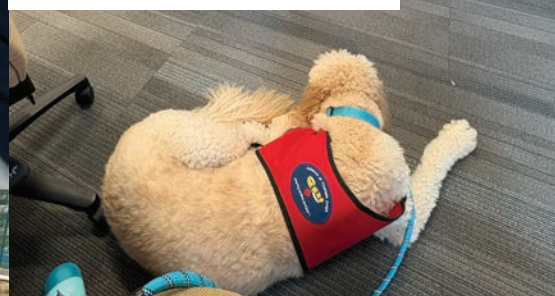




9:15 A.M. Luca regularly volunteers on campus, where he loves saying hello to students, sniffing hands and receiving butt scratches.



11:10 A.M. Luca in our Principles of Professionalism, Health Care and Health Equity course. He loves attending group courses!



2:30 P.M. Luca is a regular pet-therapy volunteer at Northwestern Medicine Lake Forest Hospital, where he enjoys visiting both patients and staff.



5:00 P.M. Luca hangs out with some of his favorite people and dog friends: Grace, Jamie and Cassie (top row); and Elmo and Luca (bottom row).



7:15 P.M. Luca cuddles up to Kat, one of his many friends, during a group study session for our cardiovascular exam.

DAY IN THE LIFE



Make a difference for students by investing in scholarships and securing the future of health care.

Big Dog on Campus

CASSANDRA GINER, CMS '28, works in RFU's Admissions Office, is a teaching assistant for her anatomy class and is a student ambassador. But it's her dog, Luca, who is the most popular one at RFU. A licensed therapy dog, Luca accompanies Ms. Giner wherever she goes,

bringing joy to students in classes and at RFU's therapy-dog events, as well as to patients and staff at Northwestern Medicine Lake Forest Hospital, where they regularly volunteer. While service dogs are task-trained to mitigate symptoms, therapy dogs such as Luca simply provide comfort and support in public settings. Ms. Giner shared some of their adventures.

—Sabreen Alfadel

Q&A



Dr. Rachael
Ellison

The Bite of Microaggressions

Degradations, mosquito bites and stress responses

A CLINICAL NEUROPSYCHOLOGIST

and assistant professor in the College of Health Professions, Rachael Ellison, PhD, runs RFU's Socially Conscious Lab. Her research explores the intersection among systemic inequities, social determinants of health and cognitive functioning.

WHAT ARE MICROAGGRESSIONS?

They're brief, everyday degradations, slights and invalidations related typically to an aspect of one's identity. They can be verbal or nonverbal, behavioral or environmental indignities that communicate (intentionally or unintentionally) derogatory attitudes toward another person. They may be related to one's ability status, gender, sexual orientation, race, ethnicity or other identities.

WHAT ARE SOME EXAMPLES OF COMMON — OR NOT-SO-COMMON — MICROAGGRESSIONS?

For women in the workplace, condescending behavior that implies women “need caretaking,” such as by calling them “sweet-heart” or “hun” in professional settings. For individuals who may be from non-White race/ethnicities, comments such as, “You speak English so well,” implying their English proficiency is unexpected, or asking, “Where are you really from?” can also be microaggressions.

WHAT MAKES THEM SO DANGEROUS?

Microaggressions are like mosquito bites. In general, one little bite might be annoying, though you might not feel it, it might not welt up. But if you get a ton of mosquito bites, that's a different story. Buildup of these slights — if you were to have hundreds or thousands of mosquito bites, that's going to go from annoying to uncomfortable to painful.

HOW DO MICROAGGRESSIONS TRIGGER STRESS RESPONSES?

For most people's biological stress-related response systems, one mosquito bite isn't going to do too much. However, if we get multiple bites, we may start to have those more inflammatory responses in our body. It's the same way when we have accumulated stress experiences — whether it's due to microaggressions, race-related stressors or other stressors. It can start to affect these biological stress responses in our bodies, both in the short term and the long term.

—Lauren Hauptman



Microaggressions are like mosquito bites. One little bite might be annoying, though you might not feel it. But if you get a ton of mosquito bites, that's a different story.

—DR. RACHAEL ELLISON

CRYSTALLIZED

LEANING INTO LEARNING STRESS

Learning is good for the brain. It strengthens neural pathways, builds cognitive flexibility and boosts resilience. But it can also be stressful. It requires focus, struggle and sustained effort. Shortcuts, such as rote memorization, cramming and other bad study habits, can bypass genuine cognitive effort.

Lalima A. Hoq, MD '97, also warns against using technology to

cut corners. "You need to learn the long way, not the short way," says Dr. Hoq, informatics physician for the Cedars-Sinai Medical Network in Los Angeles. "There needs to be that friction, and technology should help support that. Don't use technology to get information so quickly that your brain doesn't have it to draw from. You need to develop grit."

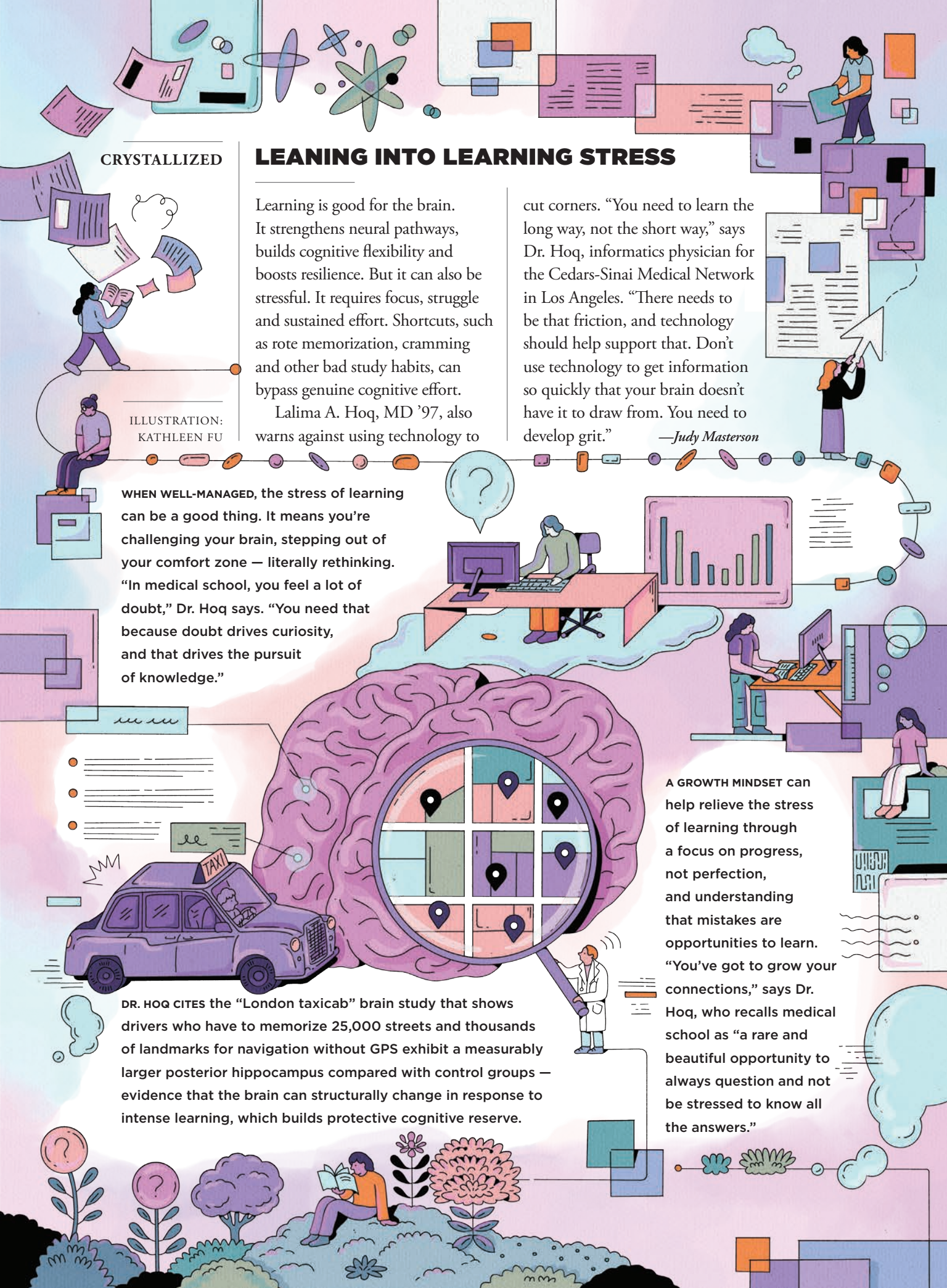
—Judy Masterson

ILLUSTRATION:
KATHLEEN FU

WHEN WELL-MANAGED, the stress of learning can be a good thing. It means you're challenging your brain, stepping out of your comfort zone — literally rethinking. "In medical school, you feel a lot of doubt," Dr. Hoq says. "You need that because doubt drives curiosity, and that drives the pursuit of knowledge."

A GROWTH MINDSET can help relieve the stress of learning through a focus on progress, not perfection, and understanding that mistakes are opportunities to learn. "You've got to grow your connections," says Dr. Hoq, who recalls medical school as "a rare and beautiful opportunity to always question and not be stressed to know all the answers."

DR. HOQ CITES the "London taxicab" brain study that shows drivers who have to memorize 25,000 streets and thousands of landmarks for navigation without GPS exhibit a measurably larger posterior hippocampus compared with control groups — evidence that the brain can structurally change in response to intense learning, which builds protective cognitive reserve.





What Are Americans So Stressed About?

ILLUSTRATIONS:
GREG MABLY

47%

of people ages 18–34 and 39% of people ages 35–44 say their stress levels are so high they lose the ability to function most days.

37%

Those who experience higher levels of stress are 37% more likely to have poor cognition, compared with those with lower levels of stress. This includes difficulty with learning, remembering and concentration.

59%

of Americans experience anxiety about their health.

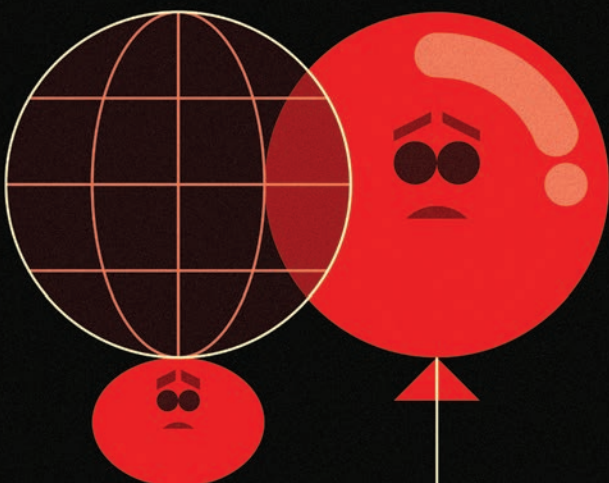


>1 in 4

More than one in four adults (28%) have talked with a mental healthcare professional in the past year — up 4% from 2024.

67%

of Americans find themselves at least somewhat or very anxious about current world events.



77%

of Americans believe untreated mental illness has a significant negative impact on families.

DISCOVERY

Science is based on fact, experience and experiment.

—DR. ROSALIND FRANKLIN



**NEURAL CONSTELLATIONS:
CONNECTING THE DOTS**

This image presents a sagittal view of the endpoints of 100 million axonal pathways in the human brain. It offers a state-of-the-art depiction of the brain's complex structural connectivity, illuminating how regions work together to support cognition, perception and behavior in health and disease. Its creator, Shawn Flanagan, PhD, sees this visualization as an artistic celebration of the brain's intricate design and a tribute to the study of neural connections. Dr. Flanagan is an associate professor in the Dr. William M. Scholl College of Podiatric Medicine and director of the Human Performance Laboratory in the Center for Lower Extremity Ambulatory Research (CLEAR).

IMAGE: DR. SHAWN FLANAGAN



BREAK-
THROUGH

This Is Your Brain on Stress

IT'S EVERYWHERE. At home, at work, at school, on our TVs and phones. We don't always know stress when we see it, but we know when we feel it. The stress response occurs without conscious effort. It happens, and our bodies are just along for the ride. The pulse races, muscles tense — do you fight? Take flight? Or freeze?

The body does what the brain tells it to do, a sort of autopilot that prioritizes essential functions in an effort to get all systems back on the level. The stress response exists to keep us safe in the moment, but too much stress takes its toll. What exactly is happening in the brain, and why do we react the way we do?

“Primary regions of the brain involved in the initiation of the stress response are the amygdala, hippocampus and cortex,” says Janice Urban, PhD, professor and director of RFU’s Center for Neurobiology of Stress Resilience and Psychiatric Disorders, an expert on how stress affects the brain. “These regions are responsible for recognizing sensory input. When we confront a perceived stress — something we see, smell or hear — these brain regions are activated and send signals to the rest of the body to assess whether this is something we need to worry about.”

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The way the body recognizes and responds to stress comprises three stages: alarm, resistance and exhaustion. The sensory processing Dr. Urban describes begins the alarm stage, which includes the sensations most of us associate with stress.

“These sensory signals filter to the hypothalamus, which is sometimes called the reptilian part of the brain — the hormonal part of the brain,” Dr. Urban explains. “The hypothalamus releases stress hormones, such as cortisol, and activates the autonomic nervous system, which releases adrenaline and also regulates breathing and heart rate. The body mobilizes all its efforts to support processes important for survival.”

Stress can be acute or chronic. An acute stress response happens over a short period of time. Say you’re afraid of dogs and come across one while walking down the street. In a matter of seconds, your body tells you how to respond. You run away, or freeze until the dog walks away, and then it’s over. Your brain gives the “all clear,” and systems return to normal functioning. Acute responses can be good for survival, steering you away from real or perceived immediate danger. Chronic stress results when the stress response is activated over long periods of time. It can manifest as cardiovascular issues, sleep disruption, weakened immune function, gastrointestinal upset, depression and anxiety. This leads into the final stage, exhaustion, when the body can no longer



Some of the effects of chronic stress can persist, resulting in mood disorders and deficits in memory and learning. Maybe these are long-term changes that you can recoup, or maybe not.

—DR. JANICE URBAN

put up resistance to stress, and chronic health conditions can worsen if left untreated.

The evidence linking stress with physiological and psychological symptoms is well established. But what does stress do to the brain itself? Does it reset, or is it permanently altered?

“That’s the million-dollar question: We assume that, after acute stress, things return close to normal — maybe right away, or in a few days depending on the stressor,” Dr. Urban says. “Some of the effects of chronic stress can persist, resulting in mood disorders and deficits in memory and learning. Maybe these are long-term changes that you can recoup, or maybe not.”

Dr. Urban and her colleagues are working to better understand the specific neural circuits that drive normal behaviors, and how fear, social stressors, pain and illness affect how these circuits function. Since not all stressors affect the brain the same way, their collective work is key to identifying important processes or mechanisms as potential targets for treating, or even preventing, stress-related illnesses.

—Sara Skoog



Advance world-class research and innovation to improve patient lives and well-being.



MATCH

*Luke Howland,
RN, BSN,
CCRN, and
Annie Rodgers,
MSN-ENP '25,
at Endeavor
Health Glenbrook
Hospital.*

PHOTOGRAPH:
MAX THOMSEN

Both Ways

A clinical partnership preps nursing students

ENDEAVOR HEALTH HOSPITALS serve as key training sites for RFU nursing students, allowing them to apply advanced nursing theory in real-world, patient-care settings. Benefits of the clinical partnership flow both ways: Students gain invaluable hands-on experience and develop advanced clinical judgment, while Endeavor

contributes to the interprofessional education of future nursing leaders and connects to a source of highly qualified graduates. During 10-week rotations across different disciplines, students learn core nursing skills.

“Together, we’re tackling the nursing shortage in our region by training the future clinicians we want and need to employ — many from the communities we serve,” says Mary Meyer, MS, BS, RN, NPD-BC, Endeavor Health’s program manager for nursing academic affiliations. —*Judy Masterson*

62%

Up to 62% of women
will be affected
by stress urinary
incontinence.

**EVERYTHING
YOU NEED
TO KNOW
ABOUT ...**

PELVIC-FLOOR PT TREATS STRESS URINARY INCONTINENCE

STRESS URINARY INCONTINENCE (SUI) is underreported and underdiagnosed. Too often, I meet people with SUI who either stop an activity that makes them leak, or wear incontinence pads, due to their belief that there is not much that can be done.

SUI is the involuntary loss of urine upon physical exertion or high-impact activities that increase abdominal pressure. Climbing stairs, getting out of a chair or even reaching for a pencil can create enough stress to cause a leak.

While aging and number of pregnancies (not just vaginal

births) increase the likelihood of women experiencing SUI, it is also very common in elite athletes — runners, gymnasts, volleyball players, dancers — and it can also affect men after prostate surgery.

The good news is there is so much that can be done to treat SUI. Pelvic-floor physical therapy can help reduce or even cure stress incontinence through improving the strength and coordination of the pelvic-floor muscles. It can also retrain the bladder for better control and gradually increase the time between bathroom visits. We offer pelvic PT care for patients with and without insurance through the RFU Health Clinics and our Interprofessional Community Clinic.

—*Sarah Haag, PT, DPT, MS, assistant professor, College of Health Professions*





*Dr. Beth
Stutzmann*



Elise Webber

Collaborative Transformation

BETH STUTZMANN, PhD, *director of the RFU Center for Neurodegenerative Disease and Therapeutics, mentors graduate student Elise Webber, who is working toward her PhD in neuroscience in the School of Graduate and Postdoctoral Studies. Here, they talk about the transformative power of interdisciplinary collaboration to change the trajectory of a research project — or an entire career.*

ELISE WEBBER: As graduate students, it's really easy to just focus on your own project, but if you reach out to other scientists, you never know when you'll come across something that opens up brand-new possibilities!

BETH STUTZMANN: Yes, most scientists have a relatively narrow band of expertise, so you call in others to complement your own.

EW: It's been really enlightening to see how it all comes together. For example, working with the Hunsberger lab examining the effects of psilocybin on memory in Alzheimer's models has opened up entirely new questions and avenues for my thesis work.

BS: We have unique opportunities here at RFU. I'm thinking of our drug discovery work with the College of Pharmacy. I couldn't even pretend to have sufficient knowledge of medical chemistry for that project, but for Dr. John Buolamwini, that's his area of expertise. And patch clamp electrophysiology isn't quite in his wheelhouse, but together we can combine those skill sets and expand our opportunities.

EW: The collaborations we have with other labs are a great reminder of how interconnected RFU is.

BS: There are so many more examples: Working on reprogrammed human neurons with Drs. Marr and Peterson (neuroscience), RNA biomarkers with Dr. Potashkin (cellular and molecular pharmacology) and Dr. Whalley (microbiology and immunology), and collaborating with Dr. Jan Urban (physiology and biophysics) on stress and chronic brain injury ...

EW: Oh, yes!

BS: We've been able to generate a lot of funding through our complementary expertise, and reach into exciting new directions we couldn't reach separately.

EW: I couldn't agree more. The collaborations I've experienced in the lab have not only opened up new avenues for my thesis work, but provided me with mentors of different backgrounds who have helped me to shape my own identity as a researcher. —*Aubrey Penney*

ILLUSTRATIONS:
MICHELLE
KONDRICH





Step to It

THE TREADMILL FARM in the Interprofessional Education Center of the Health Sciences Building is a favorite place for students, staff and faculty to get their steps in and their stress out. Movement combats the increases in cortisol and inflammation caused by chronic stress.

PHOTOGRAPH:
MAX THOMSEN



When the weight of the world becomes a cardio- vascular crisis

BY KIM WESTERMAN
ILLUSTRATIONS BY
CHRIS BURNETT

Stress and Your Heart

You eat oatmeal for breakfast and salad with lean protein for dinner. You exercise almost every day and care for your heart health in every way you know how. Perhaps you even meditate. But if you have high stress — and who doesn't? — you are still at risk of heart attack and other cardiovascular problems, many of which fly under the radar of routine preventive screening.

Stress is blamed for everything from indigestion to insomnia. But the vital organ for which it can be catastrophic is the heart. Despite decades of research, we are only now beginning to grasp the full extent of how stress can harm our bodies and even put our lives at risk.

CHANGE OF HEART

Stress doesn't just affect our emotional state and the way we feel; it actually changes the way our heart functions. Hormones, such as cortisol, that account for human "fight or flight" instincts can save our lives if we encounter a bear in the woods. But if our jobs or our relationships cause the same kinds of stress responses over time, we are at risk for chronic heart problems, some of which can be life-threatening.

Understanding the mechanics of how stress affects heart health is only half the battle. The more difficult task lies in acknowledging and addressing the stressors in our lives that aren't always obvious. Chronic work stress, caregiving responsibilities, financial pressures, and even the constant buzz of social media and its attendant doomscrolling, can all keep our nervous systems in a state of persistent activation — a slow, steady drip of cortisol that takes a toll over time. Unlike the acute shock of sudden trauma or normal grieving processes, these less visible, persistent stressors often go unnoticed, but they are just as dangerous.

Patients don't always make the connection between their lifestyle and the physiological effects they're experiencing. For example, someone experiencing frequent migraines, insomnia or digestive issues might not realize these symptoms may be manifestations of chronic stress, and this person is even less likely to connect those issues to potential cardiovascular risk.

Treating these and other symptoms in isolation can obscure the underlying stress-related origins and stop the root causes from being addressed. Emerging research is reinforcing the importance of psychosocial support in heart health. A 2023 study published in *JAMA Cardiology* found that patients who participated in regular therapy or mindfulness-based stress-reduction programs tended to have lower blood pressure, fewer heart arrhythmias and improved outcomes after cardiac events. Social isolation and lack of emotional support were correlated with worse cardiac outcomes, especially among older adults. Stress, it turns out, doesn't just damage the heart in a vacuum; it thrives in environments where people feel alone, unsupported or overwhelmed.

While eliminating stress is unrealistic — and even undesirable, since a little stress is necessary to protect us from danger — redefining our relationship to it is

essential, according to Jessica Schultz, MD '15, assistant professor of medicine, Cardiovascular Division, and medical director, Mechanical Circulatory Support Program, at the University of Minnesota. Strategies such as mindfulness practices, therapy, exercise, spending time in nature, deepening social connections and prioritizing rest can reduce the physiological burden of stress. Dr. Schultz encourages her patients to think of stress management as “preventive medicine,” just like a daily walk or a fiber-filled breakfast.

HANDLING THE STRESS HORMONE

Stress has short-term and long-term effects on the heart, explains Aamir Tirmijisaiyed, MD, a physician in Chicago Medical School's Internal Medicine Residency program at the Captain James A. Lovell Federal Health Care Center. Stress activates our hypothalamus and pituitary glands, both of which regulate bodily functions with the goal of maintaining homeostasis — internal stability in the context of constantly fluctuating external conditions. When the hypothalamus and pituitary glands are activated, they tell the adrenal glands to produce cortisol (aka the “stress hormone”), which, in turn, prepares your body to make more energy available to deal with stress, which your body reads as a threat to its well-being. In the short term, this works fine, as it is akin to rapidly responding to any emergency in order to get out of danger.

But in the long term, Dr. Tirmijisaiyed explains, “If your body is being asked repeatedly to respond to stress, your heart rate increases, your blood pressure goes up, and the oxygen demand on your heart becomes higher, then your heart starts to become overworked.”

TAKING ON THE LEADING CAUSE OF DEATH

Cardiovascular disease remains the leading cause of death worldwide, and for years, we've blamed the usual suspects: poor diet, lack of exercise, smoking. But we're starting to understand there might be a more insidious trigger: The short-term effects of stress can easily become chronic and long term, making the problem more difficult to treat.

“Everyone is at high risk for stress; it's how we deal with stress that matters,” Dr. Schultz says. “We know the traditional risk factors — diabetes, high blood pressure, obesity — but stress creeps up on people, and if you're dealing with any of those issues and stress on top of them, your cardiovascular risk is multiplied exponentially.

“Stress-induced cardiomyopathy is an extreme version of heart failure that needs to be addressed preventively even prior to known genetic predispositions. We still don't really know why some patients can withstand certain physical or emotional stressors, and others develop life-threatening cardiovascular problems as a result.”

Dr. Schultz suggests some choices we make in the course of a day might be even more consequential long term. She cites high caffeine from energy drinks, which she calls “an extreme stressor,” as very detrimental to one's health. They may seem benign, she says, but the effects of newer drinks on the market are devastating to heart health. Also: ultra-processed foods. Dr. Schultz says that while most of us know Cheetos are bad for us, we don't realize trans fats and high-fructose corn syrup, which most ultra-processed foods contain, can take years off your life.

Stress doesn't just affect our emotional states and the way we feel; it actually changes the way our heart functions.

HOW GRIEF CAN STRESS THE HEART

Lest you think a heart can't actually break, Dr. Tirmijisaiyed wants people to know: "Broken heart syndrome is a real thing."

A former patient, a middle-aged man who had recently lost his son, presented in the office with severe edema in his lower extremities. Dr. Tirmijisaiyed says, "It's easy to prescribe a diuretic that will address the edema, but it was also important to educate this patient on what grief, which is an acute form of stress, can do to our bodies."

Broken heart syndrome has a medical name — takotsubo cardiomyopathy — and it's when stress

"If your body is being asked repeatedly to respond to stress, your heart rate increases, your blood pressure goes up, and the oxygen demand on your heart becomes higher, then your heart starts to become overworked."

—DR. AAMIR TIRMIJISAIYED

actually causes the structure of your heart to change in such a way that part of it is reduced in function. Gagandeep Singh, MBBS, a resident physician at Chicago Medical School, says he has seen patients come in with symptoms of possible heart attack, such as chest pain and shortness of breath, commonly accompanied by EKG changes, ballooning of the heart on an echocardiogram and clean coronary arteries. Cardiologists are trained that the next step is to look for coronary artery disease (blockage of the arteries that supply blood to the heart) — definitive diagnosis requires an invasive catheterization — and if that test comes back clean, cardiomyopathy is often the culprit, and it is often caused solely by stress.

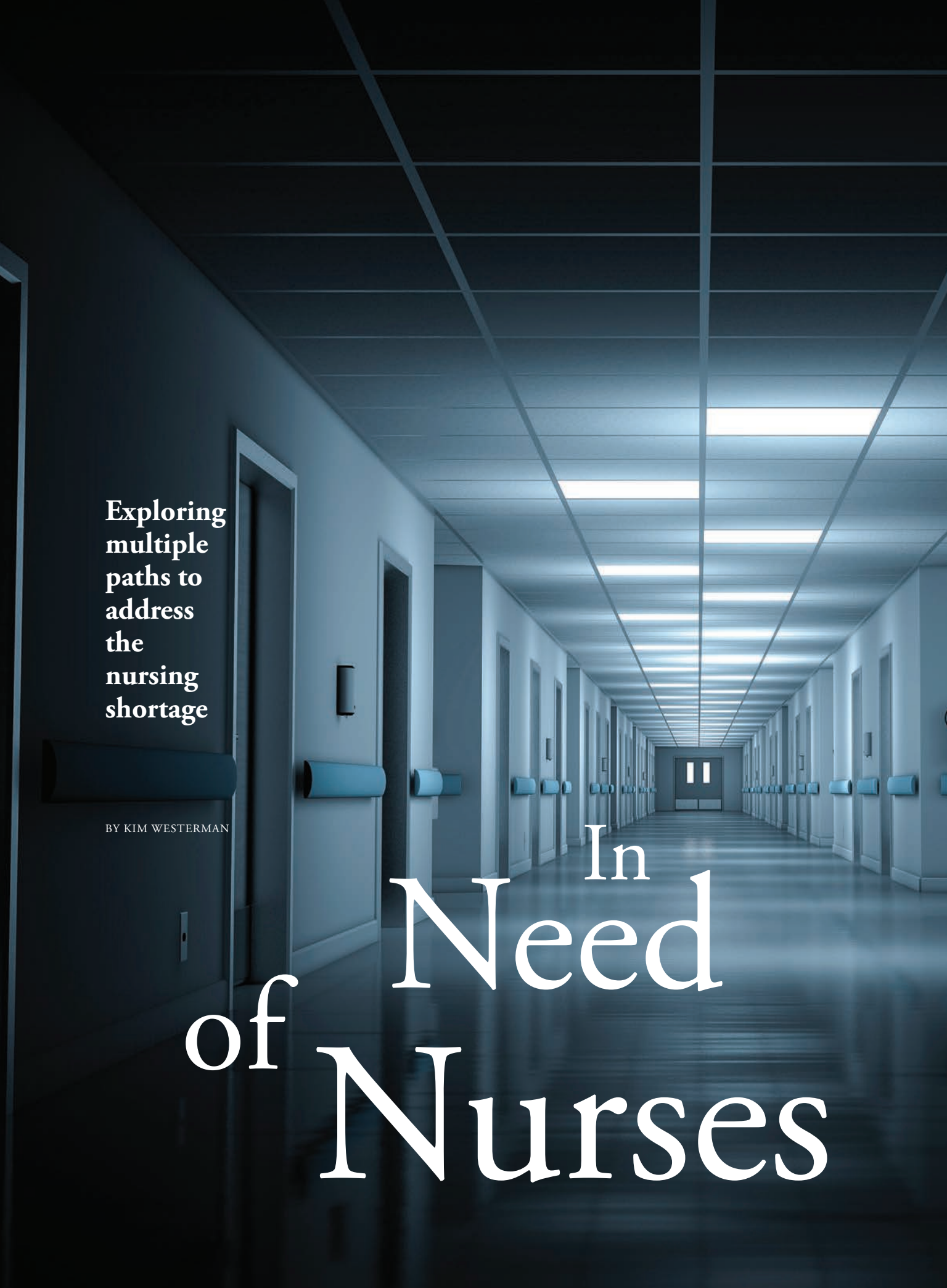
But Dr. Singh says the step of diagnosing cardiomyopathy often goes undone. "If a patient's EKG and catheterization don't signal trouble, then some doctors assume a patient is fine," he says. "But when they dig deeper, as with a cardiac MRI, they often learn that heart function is very low, despite the good EKG and clear arteries, and then, medications are often needed to help improve heart function."

Cardiomyopathy can be triggered by a sudden surge in epinephrine and norepinephrine, often in response to an emotional trauma such as the death of a loved one or some other tumultuous event. The heart muscle temporarily weakens and balloons out, usually in the left ventricle, which is the main pumping chamber. Dr. Singh says that whether this is a short-term, acute problem or a more debilitating, longer-term problem depends on what you do next: "Getting to the root causes of stress and treating it just as you would any other health problem is critical. Prolonged overworking [of the] heart puts you at risk of multiple cardiovascular pathology like heart attack, cardiomyopathy, arrhythmia and stroke."

The heart is a resilient organ, but it's also deeply responsive to our emotional lives. Taking care of your heart means more than lowering your cholesterol or hitting your step goal; it also means cultivating inner peace, purpose and emotional balance. Because stress doesn't just weigh on your mind — it also weighs on your heart.

Kim Westerman, MFA, EdD, is a travel and wellness writer, coffee expert and longtime university writing teacher based in Berkeley, California.





Exploring
multiple
paths to
address
the
nursing
shortage

BY KIM WESTERMAN

In Need of Nurses



Nurses are the people by our bedside when we are sick and scared. They are the people who care for us 'round the clock — the ones with whom we spend the most time in any medical-care setting, from the pediatrician's office to the ICU. They are often our conduit to the larger care team when we're in the hospital, advocating alongside our families in discussions about treatment and other important decisions.

But what happens when there simply aren't enough nurses?

The United States is facing a severe nursing shortage. The Health Resources and Services Administration projected a 2025 shortage of 78,610 full-time registered nurses (RNs). The Illinois Nursing Workforce Center suggests the state of Illinois, alone, is facing a shortage of nearly 15,000 RNs this year.

Twenty-three percent of RNs working in outpatient, ambulatory and clinical settings have retired or plan to retire during the next five years, according to the 2022 National Sample Survey of Registered Nurses. While hospitals had the lowest share of nurses who have retired or plan to retire, nurses employed in this setting had the lowest levels of job satisfaction.

The nursing shortage began before COVID, and the pandemic exacerbated the problem exponentially. In September 2021, an American Association of Critical-Care Nurses survey showed 66% of acute-care nurses have considered leaving nursing after their experiences during the pandemic. This trajectory also shrinks the pool of potential nursing faculty, mentors and other members of the nursing ecosystem.

"The COVID-19 pandemic had an unprecedented impact on the nursing workforce, and we're still recovering from that," says Karen Mahnke, MSN, RN, NEA-BC, Bernthal Family chief nurse executive and vice president of operations at Northwestern Medicine Lake Forest Hospital. "The intensity of nursing care for critically ill patients took its toll. We lost some of our most tenured, seasoned, very experienced nurses to retirement or different settings outside the hospital in the early days of the pandemic. Our workforce is starting to restabilize now, but we remain concerned about the nursing shortage that is predicted to last as far into the future as the data can forecast."

INTERPROFESSIONALISM FOR THE WIN

Lisa Hopp, PhD, RN, FAAN, dean of the College of Nursing at RFU, points to several factors that contribute to the shortage: a large aging population with chronic conditions that need greater nursing care, an aging population of nurses who will retire, burnout among nurses and capacity limitations in nursing education. Dr. Hopp and her faculty believe the trend toward interprofessionalism can go a long way toward building resilience and recruiting talented caregivers to close the gap — not to mention improve patient care and outcomes.

“The interprofessional model relies on professionals from different healthcare disciplines collaborating to provide patient-centered care,” Dr. Hopp says. “A nurse in the interprofessional model contributes to decision-making that requires the team’s wisdom to optimize patient care and outcomes.” She argues that this model is the best one for patient care; it inherently acknowledges all members of the team have unique skills and knowledge to contribute to the plan of care.

The interprofessional model requires staffing hospitals with nurses whose education, experience and scope of practice support independent and interdependent clinical decision-making. Dr. Hopp believes that when nursing programs prepare a workforce ready for collaboration and competent practice to

meet the clinical needs of partner organizations and health care in general, patients will have better outcomes. When care is more collaborative than siloed, patients, families, nurses and all members of the team are more satisfied. Better morale and patient outcomes will lead to a more stable workforce and net long-term economic benefits, she says.

Lori Thuente, PhD, RN, director of the RFU College of Nursing’s Dr. Scholl Foundation Empathy Lab, says there are different patient outcomes based on the level of nurses’ training: “The public tends to think a nurse is a nurse is a nurse — patients are not wondering what your degree is; they just want you there. But data shows that the higher a nurse’s level of education, the better the patient outcomes — and this extends to providers’ outcomes, as well.” (See below for a rundown on nurses’ education levels.)

Nurses with varying levels of education and preparation are critical members of an interprofessional team. “When led by those with advanced preparation, such teams excel in patient care, and nurses’ morale improves,” Dr. Hopp adds.

CARING FOR CAREGIVERS

An April 2022 analysis published in *Health Affairs* found that the total supply of RNs decreased by more than 100,000 from 2020 to 2021 — the largest drop



Nursing on the Level

Beyond entry-level nursing positions, undergraduate and graduate education programs confer additional responsibilities along with their titles.

Entry-Level Nursing Designations

- **CNA (CERTIFIED NURSING ASSISTANT):** Provides basic patient care under the supervision of LPNs or RNs.
- **LPN/LVN (LICENSED PRACTICAL NURSE/LICENSED VOCATIONAL NURSE):** Provides basic nursing care and can administer medications (varies by state) under the supervision of RNs or physicians.

Undergraduate Nursing Designations

- **ADN (ASSOCIATE DEGREE IN NURSING):** Entry-level registered nurses perform patient assessments, administer medications and provide technical care.
- **BSN (BACHELOR OF SCIENCE IN NURSING):** RNs with expanded responsibilities and professional clinical judgment, including leadership roles, community health, research awareness and eligibility for management.

ever observed during the past four decades. A significant number of nurses who left the workforce were under the age of 35, and most were employed in hospitals.

If we didn't know it prior to the start of the pandemic, what we learned in 2020 and 2021 is that nurses' self-care became a critical part of the job. But when one is caring for patients in life-or-death situations, it's nearly impossible for caregivers to prioritize their own well-being. When nurses are unable to care for themselves, burnout increases, and patient outcomes suffer.

One of the core values of RFU's nursing programs is to help nurses cultivate their own emotional intelligence, to bring mindfulness to clinical practice and to practice regular self-care, all of which are key to reducing burnout, building resilience, and retaining and recruiting nurses.

A multipronged approach can address these issues and others to tackle the nursing shortage. It's a good thing, because we need nurses, now more than ever.

Secure the future of
community health
care by investing in
education opportunities.



Educating Nurse Anesthetists in Underserved Areas

One of the ways the RFU College of Nursing is addressing the multifaceted problem of the nursing shortage is to expand its very successful model to underserved areas. Jennifer Greenwood, CRNA, PhD, associate professor and associate program director of the Nurse Anesthesia Program at RFU's Colorado location, explains: "There are many programs in Illinois, Wisconsin and Michigan, but far fewer in Colorado, Wyoming, New Mexico and Nevada. There's a severe nurse anesthetist shortage here in Colorado, and it made sense for us to bring our established program here."

Nurse anesthesia is the oldest of the advanced-practice nursing specialties. As early as the 1880s, nurses were called upon by surgeons to ensure their patients remained amnestic and lived through surgery successfully. At that time, anesthesia involved the rather imprecise dropping of ether on a mask of cotton and placing it over a patient's nose and mouth. Dr. Greenwood says this is an early example of the vital role of interprofessional communication and close connection with patients, the need for which continues to this day: "Our program focuses on clinical decision-making and evidence-based practice so that nurses can adapt the care they provide to the complex needs of patients they encounter."

Graduate Nursing Designations

- **MSN (MASTER OF SCIENCE IN NURSING):** RNs with an MSN may enter professional nursing, pursue advanced practice roles (NP, CNS, CNM, CRNA), serve in leadership, administrative and/or education roles.
- **NP (NURSE PRACTITIONER):** Typically MSN- or DNP-prepared, NPs provide advanced care, including diagnosing, prescribing and managing patient treatment, often with authority to practice independently (varies by state).

■ CNS (CLINICAL NURSE SPECIALIST):

Advanced clinical experts in a specialty area who focus on improving patient outcomes, staff education and evidence-based practice.

■ CNM (CERTIFIED NURSE MIDWIFE):

Specialize in pregnancy, childbirth, postpartum care and reproductive health services.

■ CRNA (CERTIFIED REGISTERED NURSE ANESTHETIST):

Provide anesthesia care before, during and after medical procedures, including pain management.

Doctoral Nursing Degrees

■ EdD IN NURSING (DOCTOR OF EDUCATION):

Focus on nursing education leadership, curriculum development and academic administration.

■ DNP (DOCTOR OF NURSING PRACTICE):

Practice-focused doctorate; emphasizes clinical leadership, advanced practice and quality improvement in healthcare systems.

■ PhD IN NURSING:

Research-focused doctorate prepares nurses for careers in academic research, nursing science and teaching.



**Management
and moderation —
from dating to
dopamine —
help keep brains
in balance**

BREAKING

UP

WITH

APP

BY HELYN TRICKEY BRADLEY
ILLUSTRATIONS BY RYAN SNOOK

ADDICTION



kristen (name changed) first suspected she might have a problem when she found herself checking her Facebook app every morning before getting out of bed.

“I felt like I was giving social media the first and best part of my day,” she said. It wasn’t just her mornings that were given over to screen-scrolling through apps. Kristen’s husband had mentioned more than once that she seemed “checked out,” and her children often repeated themselves because Kristen was riveted to her Facebook feed instead of listening. She found herself unlocking her phone to access Facebook and other apps hundreds of times per day.

Because Kristin’s profession includes digital creation for her business, disconnecting from an app that kept her engaged with her clients was impossible. But controlling her time on Facebook proved challenging, too.

“The algorithm is designed to keep you scrolling, feeding you content that tugs at you,” she said. “What started as a five-minute check-in would turn into 30 minutes, and I found myself mindlessly scrolling for hours every day.”

Kristen’s preoccupation with her phone apps was taking a physical toll, too: “Physically, I was dealing with headaches and eye strain. Mentally, I felt foggy, easily distracted, stressed and often overwhelmed.”

Kristen’s physical and mental responses to her excessive use mirror classic signs of addiction, said Heinz Steiner, PhD, professor emeritus at Chicago Medical School. “The brain functions best in a stable state, and it doesn’t like to be stimulated too much. With too much activation, the brain will slam on the brakes, and cells will become more resistant to ‘feel-good’ neurotransmitters like dopamine.”

In her book, “Dopamine Nation: Finding Balance in the Age of Indulgence,” Anna Lembke, MD, argues that we are all addicts to a degree, given the ubiquitous nature of smartphones and apps and our natural propensity to continually seek quick hits of dopamine. “We’re seeing a huge explosion in the numbers of people struggling with minor addictions,” she writes.

FROM HABIT TO COMPULSION

At a basic level, addiction begins when we do something that feels good: We gamble on a sporting event, binge-watch a show on Netflix, fill our online shopping carts, smoke a cigarette or surf on a dating app. The action feels good because the brain’s reward pathway — a circuit linking the ventral tegmental area, the nucleus accumbens and the prefrontal cortex — is flooded with a number of neurotransmitters, the most important being dopamine, a chemical associated with feelings of pleasure and well-being.

When Ellen (name changed) first logged in to a dating app after a bruising divorce, she was thrilled to find a vibrant community of like-minded adults. Soon, she found herself using the apps more and more, thrilled when a sound notification indicated another user had sent her a message. Before long, she’d downloaded a host of other dating apps, spending as much as eight hours a day scrolling through dating profiles and avoiding work to spend more time online. Through one of her dating apps alone, Ellen could get as many as 50 notifications per day.

“I felt like a Pavlovian doggie every time it dinged — I’d get a little shot of happy through my body,” she said.

“Our brain’s reward center makes you repeat the action, and over time, this will shift the involved neural pathways in our brains, so the behavior can become a habit and, in extreme cases, a compulsion,” Dr. Steiner said. The more dopamine, and the faster it’s released into our brain’s reward center, the more addictive a substance or behavior is deemed.

“An addiction disorder is a compulsion disorder — you have to do the drug or behavior, or you feel bad,” Dr. Steiner said. “And this shift is important. You begin to feel sick, and instead of being pleasure-seeking, the compulsion becomes about avoiding feeling bad. Your life suffers.”



DESIGNED TO ADDICT

Apps are cleverly designed to capture our attention and to keep us scrolling longer, mostly in an attempt to scrape more and more user data, according to a 2019 article in the *International Journal of Environmental Research and Public Health* titled “Addictive Features of Social Media/Messenger Platforms and Freemium Games Against the Background of Psychological and Economic Theories.”

According to the study’s lead researcher, Professor Dr. Christian Montag, tactics app developers employ to snag and keep users include inducing a state of user flow, the endowment/mere exposure effect and the Zeigarnik/Ovsiankina effects.

“Flow” refers to a state of deep absorption in a task, especially one that requires us to push past something difficult to achieve results. We often lose track of time in this valuable state, but the payoff in our brain chemistry is a steady drip of dopamine that doesn’t overwhelm our reward pathway. Flow is the brain state many of us naturally attain when we begin to master a new skill.

Smartphone apps can drop us too quickly into a state of flow without us having to overcome any difficulty to get there. The result is a large wash of dopamine and other neurotransmitters that flood our reward pathways and don’t let up.

“It is well known that flow goes along with a feeling of time distortion, and this is exactly what many developers of social media apps and freemium games aim to achieve — a person being so immersed that he or she is forgetting about time and space,” Dr. Montag reports.

Those who spend time on world-building games such as Minecraft will recognize the pull of the endowment/mere exposure effect. During early use, players can build an island, farm or personalized platform, adding free amenities that encourage engagement. Research shows the more time users invest in constructing a familiar world, the more difficult it is for them to abandon the app. Even dating apps that require users to spend time building elaborate profiles complete with pictures and videos benefit from the endowment/mere exposure effect. The more time people spend answering personal questions and building up content, the more loath they are to abandon the platform.



BATTLE LINES: ATTACKING APP ADDICTION

Anna Lembke, MD, author of the book “Dopamine Nation: Finding Balance in the Age of Indulgence,” suggests steps people can take to break the bond of app/social media addiction:

ABSTINENCE: Give yourself at least four weeks of abstinence from apps and social media. This break allows your brain’s reward pathway to reset from dopamine overload and think more clearly.

DISTANCE: Create physical distance between you and your addiction. Maybe you have one device you use only for work and another for the apps you enjoy. Perhaps you access your apps only during certain hours.

HONESTY: Practice radical honesty with yourself and others. Honesty begets intimacy, and authentic connection is a source of healthy dopamine levels.

ALTERNATIVES: Strive for a pleasure/pain equilibrium in your brain by seeking out alternative healthy activities that have small pain points along the way, such as moderate exercise, meditation or learning a new skill.



Another way app developers keep users hooked is by purposefully interrupting them when they are engaged in rigorous, high-investment tasks. Most users feel emotionally strained, getting relief only by returning to the task later to complete it. This is called the Zeigarnik/Ovsiankina effects, named after the social scientists who first observed and reported the behavior. Games such as Candy Crush Saga offer free “lives” to players who’ve abandoned the game. When players reengage, they are challenged to “super hard levels” and lose several of those free lives. By losing, users experience an interruption and are more attracted to the game than ever before, seeking to finish the task and finding redemption in the next game level.

According to the Pew Research Institute, **85%** of Americans self-report they go online daily, and **31%** say they are online “almost constantly.” While the lion’s share of constantly connected adults are, unsurprisingly, digital natives (18- to 29-year-olds), adults ages 30–64 are joining their ranks quickly. The number of constantly online Americans ages 30–49 ticked up 14 points since 2015, and the share of 50- to 64-year-olds ballooned from 12% in 2015 to 22% in 2021.

KICKING THE DOPAMINE MONSTER

The human brain reflexively seeks out pleasure and avoids pain at all costs. This evolutionary advantage can also hobble us, especially with so many quick dopamine delivery systems now at our fingertips.

Experts advise being more judicious about how we get our dopamine, avoiding “feel-good” neurotransmitter super-soaker activities — such as unchecked app usage — in favor of harder-won dopamine-delivery activities, such as learning how to play a new musical instrument or trying a new sport. By purposefully getting our dopamine dosage in smaller, more manageable bits, we can better keep our brain chemistry in balance.

Ellen, the woman who struggled with a dating-app addiction, brought her troubling behavior to the attention of her therapist, who advised her to abstain for a month. Ellen also changed her behavior, meeting with friends face-to-face instead of online, taking a sculpture class and going to the theater more often.

In the end, Ellen returned to dating apps but with a number of self-imposed restrictions. “I don’t allow any notifications on my dating apps — no sounds, no alerts of any kind,” she said. “And I can’t look at the apps while I’m working at my desk.”

The gold standard for treating app/social media addiction is Cognitive Behavioral Therapy (CBT), and antidepressants can sometimes aid in dulling a patient’s brain’s pleasure center. But for most

people trying to kick a habit, the psychology of behavior matters.

“It’s usually not the thing itself; it’s how the addictive behavior or substance is used,” said Nancy Jao, PhD, assistant professor and director of The Health, Behaviors and Tobacco Use (HaBiT) Research Lab at RFU. “It’s the meaning the person struggling with addiction is taking from whatever they’re using.”

Research conducted by Dr. Jao primarily focuses on understanding the impact of tobacco product use on health outcomes. Still, she sees common connections between someone trying to quit smoking and someone struggling to manage their TikTok use.

“Addictive behaviors often serve a purpose for the individual, even if unconsciously. Otherwise, it would be much easier to stop,” Dr. Jao said. “Are they smoking to feel better? Because they’re hungry? Because their family or friends smoke? Even boredom can be a reason. The most effective way to address the behavior often depends on the underlying reasons for use.”

Kristen, the woman who couldn’t stop scrolling through Facebook, also took steps to end her dependence. She removed the apps from her phone, and she only accesses them on her desktop computer during specific times of the day.

Both women reported feelings of withdrawal.

Ellen said she felt a physical sensation, a craving for attention she’s had to manage as she settles back into her moderate dating-app usage.

And Kristen admitted the first few days without her phone apps were rough: “I was constantly reaching for my phone out of habit. There was a strange emptiness that made me realize how much social media had been filling space in my mind and soul.

“You only get one life — don’t scroll it away.”

For her, this newfound control over her addiction isn’t only about getting more time back in her day. “It was about reclaiming my attention, my peace and my purpose.”

Helyn Trickey Bradley, MFA, is a journalist based in Portland, Oregon. She writes essays and articles for national publications including O, The Oprah Magazine; CNN; PBS; and The Oregonian.

KIDS, TOO

Most existing research on mental health and screen-based activities for U.S. youth focuses on the amount of total screen time — the time spent engaging with mobile phones and tablets. But a study published in June 2025 in the medical journal *JAMA* found that it’s screen addiction that may be the bigger risk factor for suicidality and mental health in youth.

According to the study “Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths”:

- 48% of young adolescents report losing track of how much they are using their phone.
- 25% use social media to forget about their problems.
- 25% admit to spending a considerable amount of time thinking about social media apps.
- 17% have tried to reduce their social media use but cannot.
- 11% acknowledge that their screen use has negatively affected their schoolwork.

“The researchers found addictive behavior to be very common among children — especially in their use of mobile phones, where nearly half had high addictive use,” Ellen Barry wrote in *The New York Times*. “By age 14, children with high or increasing addictive behavior were two to three times as likely as other children to have thoughts of suicide or to harm themselves, the study found.”

P R A C T I C E

By doing our
best we shall
succeed in
our aims: the
improvement
of mankind.

—DR. ROSALIND
FRANKLIN





FIELDWORK

Breaking Down Stigma

Dealing with mental-health diagnoses in marginalized communities

LONG BEFORE Kamilah Banks-Word, MD '14, knew the term “stigma,” she intuited there was shame around mental-health conditions and had the sense there was no way out for the most vulnerable. Her stepfather’s mother had schizophrenia and wasn’t able to comply with treatment, so she witnessed up close the havoc wreaked by untreated mental-health conditions and their trickle-down effects on the whole family.

Dr. Banks-Word grew up in Cabrini-Green, the former housing project in Near North Chicago. From a young age, she observed a great deal of suffering around her — people talking to themselves, seeming quite unwell, even anguished — which she later came to understand was untreated mental illness, often connected to poverty. These were her neighbors, people in her community she saw almost every day. She recalls asking her mom: “Why is this person sick? What’s wrong?”

Now a child and adolescent psychiatrist, Dr. Banks-Word works at the West Town branch of Erie Family Health Center in Chicago, a Federally Qualified Health Center (FQHC) that treats underserved populations in the inner city and surrounding areas, including many from ethnic minority groups.

SAFETY NET
Dr. Kamilah Banks-Word works with underserved populations in Chicago.

PHOTOGRAPH:
MAX THOMSEN

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FQHC facilities are “safety net” providers that receive federal funding to treat members of minoritized communities in outpatient settings — in other words, patients who likely would not have access to medical care otherwise. Dr. Banks-Word reports that changes in federal funding have made it more challenging for some to get care, including a significant increase in migrants ages 42–64 who are losing health benefits. Erie’s mission is to serve all, regardless of ability to pay or immigration status, so the organization is finding creative approaches to funding, including working with state agencies and private donors, so no one falls through the cracks.

Recent studies have confirmed a suspected causal link between poverty and nine mental-health diagnoses, including illnesses Dr. Banks-Word treats every day in her practice, such as bipolar disorder, major depressive disorder,

obsessive-compulsive disorder, post-traumatic stress disorder and schizophrenia.

The social stigma that has long been associated with mental illness is exacerbated in marginalized communities. Dr. Banks-Word peels back these layers of complexity to first address the shame her patients feel, which is often an obstacle to seeking care. Add to this caregiver stress, economic hardship and legislation that excludes or makes access to

Recent studies have confirmed a suspected causal link between poverty and nine mental-health diagnoses.

medical care difficult, and we’ve got a devastating problem of social isolation and untreated illness that causes harm at both the individual and community levels.

Dr. Banks-Word’s approach is to treat each patient as a whole person within a family structure and each diagnosis as a specific health problem, working not only with medications but also with natural interventions such as meditation, exercise, therapy, and over-the-counter vitamins and supplements. A holistic approach to care allows her to educate patients in resisting media representations of poverty and mental illness, because she approaches them as people suffering with health conditions, rather than as people who are “crazy” or somehow to blame for their symptoms. It also addresses learned self-stigma, generational shame and “minority stress” — the extra stress people from minority groups are exposed to as a result of their social position.

Dr. Banks-Word, herself, faced a difficult path to her medical degree, given that “STEM was not exactly a household word” in Cabrini-Green. The support she found in college and medical school — including serving as a National Health Service Corps Scholar and participating in RFU’s Pre-Matriculation Program — set her on a course to become a healer, a helper and a doctor. The observant empathy she’d discovered as a child is now employed to help patients heal from stigma and transform their relationship to mental health.

—Kim Westerman



4 Things to Know about Dr. Sousa

A Q&A with RFU's incoming president



ARON SOUSA, MD, became president of Rosalind Franklin University on November 10, 2025. Helix caught up with him by phone during his busy move from East Lansing, Michigan, to North Chicago and asked him a few questions.

1

WHAT IS THE MOST IMPORTANT QUALITY YOU'LL BRING TO RFU FROM YOUR TENURE AS DEAN OF THE COLLEGE OF HUMAN MEDICINE AT MICHIGAN STATE?

ARON SOUSA: I've spent my career trying to expand opportunities and connections among the college and the university and our communities. That means developing ways for people to get the benefits of academic health, which includes better health care. Figuring out how to talk about the importance of good research, of innovation, of opportunity through education is only going to become more important. That's what I've spent my time doing, and I look forward to working with everyone at Rosalind Franklin to expand the great work they already do in those areas.

2

HOW DOES YOUR WORK AS A PRACTICING GENERAL INTERNIST INFORM YOUR ROLE AS AN EDUCATOR?

AS: I grew up in my discipline, and I learned to be an educator by teaching internal medicine residents, then medical students, then nurses and physician assistants. One of the things

I enjoyed most when I rounded was the interprofessional teams. Medical students, nursing students, pharmacy students would join the internal medicine team and were incredibly valuable. It was wonderful to watch the students work together. There's just something about patient care that changes the way you think about education and administration.

3

COMMUNITY HEALTH IS A CORE FOCUS AT RFU. WHAT DOES THAT TERM MEAN TO YOU PERSONALLY, AND HOW WILL THAT GUIDE YOUR LEADERSHIP HERE?

AS: It's among the work I am most proud of over my career. You have to engage with the people of a community — understanding not just that you're there to serve, but that you're a collaborator. Value their expertise and what they bring to the effort. What are the goals we share that we can work on together? In my career, that's worked multiple times in multiple places in different kinds of communities. There's an approach that can help that happen. It isn't fast. It doesn't happen overnight. You have to understand each other; you have to develop trust. Institutions are successful when their community is successful.

4

DETROIT-STYLE PIZZA OR CHICAGO DEEP DISH?

AS: Chicago deep dish. Forever and always. I don't know what Detroit thinks they're doing.



A Secret Love

On research and big data

WHEN I WAS in my first year as a podiatry student at the Dr. William M. Scholl College of Podiatric Medicine, I was reminded daily, in my science-heavy course load, that my college undergrad major had been business management. Throughout my undergrad time, I knew I wanted to study medicine — business was my backup plan — so I had the prerequisites for biochemistry and neuroscience, but unlike many of my classmates, I had no track record in either, so at times, I struggled to maintain my confidence.

A few years earlier, in my clinical training at Moffitt Cancer Center in Tampa, Florida, I had made a surprising discovery about myself: I learned that I enjoyed research. I loved every detail about oncology research, even the most tedious minutiae, and I worked in the same research lab for years. Still, I knew I wanted to treat patients hands-on, so I never thought research would occupy much of my time in my future career. My time in research would be a blip on the screen, a happy memory.

Flash forward to the Understanding and Implementing Research course at Scholl. On day one, Professor Adam Fleischer, DPM, went around our small-group room and asked each student, one by one: “What is your research background?” and “Would you like to do research?”

There was a spark in me at the very question, but everyone else in the room seemed to shrink. I could practically read their minds: “I can’t take on extra work”; “Research is boring.” So, when Dr. Fleischer got to me, I said quietly, “No, I’m not interested.” But the moment I got home that afternoon, I regretted not having confessed my love for research, and I knew I needed the positive feedback loop, despite how much extra work it would be.

I was good at research, so why shouldn’t I say yes? I emailed the professor and let him know I’d changed my mind. Since that moment, I’ve never stopped doing research. After med school, I got my master’s degree in public health, and big data is now central to my podiatry practice. But even more, I use it to help our specialty understand outcomes, patient satisfaction and the uses of technology to improve lives. And I love every minute of the research — gathering, analyzing and reporting data to support my work and the work of my colleagues across the country — and most importantly, to improve the care of patients with foot and ankle problems.

Rachel Albright, DPM ’15, MPH, is a foot and ankle surgeon at Stamford Health in Stamford, Connecticut, and the chair of the research committees for both the American College of Foot and Ankle Surgeons (ACFAS) and the American Podiatric Medical Association (APMA).



**I was good
at research,
so why
shouldn’t
I say yes?**

—DR. RACHEL
ALBRIGHT

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OUTSIDE PERSPECTIVE

Physical activity is an ideal form of stress relief. Movement combats the increases in cortisol and inflammation generated by chronic stress. When paired with time spent in nature — even just a walk around campus — it can be just the thing to lower your stress level.