FINDINGS

Winter/Spring 2022 • omrf.org

LEADING WITH HEART

For Dr. Andrew Weyrich, guiding OMRF comes from a deeply personal place

For 75 years, OMRF has been making a difference for real people.

You can help the work continue.
Please give to medical research today.

give.omrf.org | 405-271-7400

100% of your gift goes to research!

FINDINGS

Winter/Spring 2022

FEATURES

ALSO IN THIS ISSUE

Chartered in 1946, OMRF is an independent, nonprofit biomedical research institute dedicated to understanding and developing more effective treatments for human disease. Its scientists focus on such critical research areas as cancer, diseases of aging, lupus and cardiovascular disease.

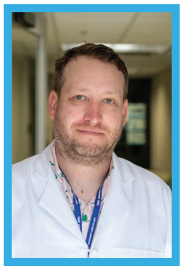
CHAIRMAN OF THE BOARD Len Cason, Esq.
PRESIDENT Andrew S. Weyrich, Ph.D.
EDITOR-IN-CHIEF Adam Cohen, Esq.
MANAGING EDITOR Lindsay Thomas
ART DIRECTOR Jenny Lee
WRITERS Steffie Corcoran, Kate Miller, Tony Thornton

405-271-6673 • findings@omrf.org

COVER PHOTO: Brett Deering
BACK PHOTO: The Oklahoman

Go East, Young Man

A West Coast transplant aims to improve cancer therapy



For Dr. Jake Kirkland, research has always been a "go where the science takes you" proposition. As a postdoctoral fellow at Stanford University, he was part of a team that identified genes that seem to predict which patients' tumors will respond to a particular chemotherapy drug. That drug, doxorubicin, is known as the "red devil" because of its Kool-Aid-like color and punishing side effects.

When it came time to open his own lab, Kirkland decided to follow that work. Specifically, he set a goal of better identifying those whose tumors won't respond to the therapy. That way, he might be able to help spare patients from a futile course of treatment that can lead to collateral damage ranging from heart and brain damage to infertility. "If success is highly unlikely," says Kirkland, "a patient shouldn't have to go through all that."

A lifelong Californian, Kirkland zeroed in on OMRF because of the "rigorous scientists" in the foundation's Cell Cycle & Cancer Biology Research Program. And when that group of scientists met Kirkland, the attraction proved to be mutual.

"His enthusiasm was obvious," says Dr. Susannah Rankin, who led the hiring process at OMRF. "He's working on important projects, tackling things that are closer to the clinic than what the rest of us in the program do." She and her colleagues saw an opportunity to lift all boats: "He's going to make us better, and we'll make him better."

When Kirkland and his wife, Brionna Seley, arrived this past spring in Oklahoma City, its energy struck them. "Lots of cities claim to be on the rise, but you can really feel it here," he says.

The couple thought their new home would be just for the two of them, plus their 10-year-old rescue mutt, Zoe. But when they found a stray, visually impaired Australian Shepherd dodging cars in the city's Plaza District, Cherry (named for her pink nose) joined the family.

Cherry represents but the latest addition to a life that's already full to the brim. Outside the lab, Kirkland is an avid birder and wildlife photographer, a woodworker, a chef, and an amateur herpetologist. His home brewery also awaits reassembly in his garage following the trip from Silicon Valley.

His hobbies, he says, "involve lots of quiet time," which clears Kirkland's head to devise new hypotheses and experiments. "Some people think best in the shower. I do my best thinking out in the field with my camera and binoculars."

These days, much of that thought revolves around why doxorubicin works so unpredictably. "In breast cancer, the success rate for this chemotherapy is around 50%. We want to raise that number," he says.

He also aims to understand what's causing some people's bodies to resist treatment – and whether scientists can change that. "If we can do that," Kirkland says, "the drug could help them." For those patients, breakthroughs from Oklahoma's newest cancer researcher can't come soon enough.

© Chloe Zola 2021, Levy Creative Management, NYC

Hitting the Target

Dr. Magdalena Bieniasz is charting a new course against ovarian cancer

If there's one thing Dr. Magdalena Bieniasz is sure of, it's that no two cancers are exactly alike.

"Once you classify a tumor, there are subtypes," Bieniasz says. "And every person responds to treatments differently. There's no one solution."

Since joining OMRF from Utah's Huntsman Cancer Institute in 2014, Bieniasz has studied high-grade serous ovarian cancer. It totals nearly 70% of cases of the disease and is frequently resistant to chemotherapy.

"When you start with general therapy, the sensitive cancer cells will die," Bieniasz says. "But resistant cancer cells remain." To combat this, Bieniasz is focusing on precision treatment techniques customized for a person's unique disease.

"In targeted therapy, drugs are matched to specific tumors. We characterize samples so we know which tumor is a good candidate for each treatment," she says.

This personalized approach recently earned Bieniasz a two-year grant from the National Cancer Institute. The funding will enable her to test innovative combinations of drugs to kill cancer cells and inhibit new tumor growth.

She'll do the work in partnership with the University of Oklahoma Health Stephenson Cancer Center. With the consent of patients, OU Health physicians will provide samples of ovarian tumors to Bieniasz's lab, where she'll test the therapies in preclinical models.

"There are other ways to do research, but I always like to be closer to the patient," Bieniasz says. "Working with real patient tumors is the best way to test precision medicine methods."

As a scientist in OMRF's Aging & Metabolism Research Program, Bieniasz acknowledges her focus on cancer may sound a bit out of place.

Photo by Brett Deering

Spotting the Signs

Common symptoms of ovarian cancer include persistent, unusual or severe:

- Bloating
- Pelvic or abdominal pain
- Trouble eating or feeling full quickly
- Urgency or frequency with urination

Source: American Cancer Society

But Dr. Holly Van Remmen, who leads the program and holds the G.T. Blankenship Chair in Aging Research, doesn't think so.

"Aging is the biggest risk factor for many diseases, including cancer," says Van Remmen, noting the average age for ovarian cancer diagnosis is 62. Although many institutions segregate their approaches to studying cancer and aging, OMRF has mapped a different course. Bieniasz collaborates with several scientists more focused on traditional "aging" questions, expanding her research to study how metabolism impacts ovarian cancer. "Science is a team sport. Dr. Bieniasz is the perfect example of what can happen when you have new collaborators," Van Remmen says.

While Bieniasz is optimistic about the future of personalized medicine for ovarian cancer, she says early detection remains critical in the fight against the disease that claims the lives of nearly 14,000 American women each year. According to the American Cancer Society, in addition to age, risk factors for ovarian cancer include obesity, having a first full-term pregnancy after age 35 or never having children, specific hormone therapies taken after menopause, and a family history of ovarian, breast or colon cancer.

"Research is advancing. There are better and faster methods to diagnose and treat patients," Bieniasz says. "That isn't helpful unless women see their doctor when they think something might be wrong. Too many wait until it's too late."

Life Changer

Oklahoma's lupus cohort marks 20 years

Jennifer Chan will never forget her first visit to OMRF.

It was almost two decades ago, and the foundation was renovating the Rheumatology Research Center of Excellence. Caregivers were temporarily seeing patients in a mobile clinic in the parking lot.

"It was a trailer," she laughs. "But it was a light at the end of the tunnel. I saw I could have a normal life."

Three years earlier, Chan's doctor diagnosed her with lupus, an autoimmune disease that strikes women at disproportionate rates.

Lupus occurs when the immune system becomes unbalanced, leading to antibodies and chronic inflammation that damage the body's organs and tissues. People with the condition experience periodic disease flares, affecting organs that can include the kidneys, lungs, skin and joints, and the cardiovascular system.

Chan, of Oklahoma City, was 14 years old when her symptoms first appeared. Six months passed before she learned the cause of her chickenpox-like rash and an unrelenting, seizure-inducing fever.

"It was scary," says Chan, now 36. "But I decided if my body was going to fight me, I was going to find a way to fight back."

That path led to OMRF's Dr. Joan Merrill. A physician-scientist, Merrill was devoted to caring for patients like Chan. But she also wanted to be immersed in research to transform the landscape of lupus diagnosis and management.

At Columbia University, where Merrill worked as a rheumatologist prior to coming to Oklahoma, she was too busy with patient care to

For Jennifer Chan and others with lupus, contributing samples to OMRF's lupus cohort presents a chance for empowerment. "I was practically beating down the door to join the cohort," she says.

Photo by Rob Ferguson

study the disease. At OMRF, she could do both. “My entire job was the thing that I’d always dreamed of doing,” she says. “I could see patients, and almost all of it was about research.”

The centerpiece of that research was the Oklahoma Lupus Cohort, which Merrill established at OMRF in 2001. Known today as the Oklahoma Cohort of Rheumatic Diseases, it’s a collection of tens of thousands of blood, urine, saliva and tissue samples donated by research volunteers. Researchers at OMRF have used those samples to delve deeper into lupus, and they’ve also shared them with research collaborators at dozens of institutions around the world.

All told, the samples have contributed to more than 500 research studies published about lupus. And since the birth of the cohort, three new medications for lupus have earned Food and Drug Administration approval. All went through clinical trials at OMRF, tested by cohort patients.

“It opened our eyes that we could do different kinds of science here.”

For patients like Chan, participating in research presents a chance for empowerment, an opportunity to turn the tables against a disease that too often wreaks havoc on their lives.

“I was practically beating down the door to join the cohort,” she says. Chan imagined the possibility of having a younger sibling or a child with lupus. “I wanted the future to be better for them.”

And today, says Merrill, it is.

“The downstream effect of the growing knowledge base is earlier diagnosis, flare prediction and intervention, and customized treatment,” says Merrill.

A 2021 analysis published in the journal Environmental Research and Public Health found that OMRF leads the U.S. in research productivity on systemic lupus erythematosus, the most common form of the disease. Over the past half-century, the foundation has contributed to more research papers on the disease than any other institution in the world – nearly 10% of all lupus studies have a foothold at OMRF.

Photo by Brett Deering

Dr. Joan Merrill, left, helped build a collection of patient samples that has impacted lupus research worldwide.

That’s attributable in no small part to the cohort, says OMRF Vice President of Clinical Affairs Dr. Judith James. Beyond its worldwide contributions to the understanding of lupus, James says the cohort fundamentally shifted research at the foundation.

“It opened our eyes that we could do different kinds of science here,” says James.

Recently, that has included progress on what James calls “the cutting edge of precision medicine for lupus.” Her lab collaborated with Merrill last year to publish new research that, through studying years of blood samples from cohort patients, showed how lupus changes at the molecular level over time.

“We have never been able to do that,” says James. “That may help us as we pick the right treatment for a patient.”

Merrill also pioneered novel clinical trial designs to improve testing new therapies for lupus. “We hadn’t done investigator-initiated clinical trials at OMRF before Dr. Merrill,” says James.

Become Part of the Solution

For information on joining OMRF’s lupus studies, call 405-271-7745 or email clinic@omrf.org.

In those studies, a scientist at a research institution like OMRF, rather than at a pharmaceutical company, develops and leads the trial efforts.

One study Merrill designed revealed that to test new lupus drugs effectively, doctors must first scale back patients’ current medications. The Lupus Foundation of America called the work “precedent setting.”

Merrill feels certain that OMRF’s environment, which blends clinical and lab research with world-renowned experts in autoimmune disease, has allowed the cohort to thrive. “It would have never had the same impact without OMRF,” says Merrill. “It was the conjunction of planets.”

The trailer-turned-clinic where Chan first met Merrill is long gone. One day soon, Chan believes, lupus will join it in the scrap heap of history. “If not in my lifetime, it will be solved for future generations,” she says. “Because of research.”

> I've had friends and family face diseases and overcome them. I've seen great strides happen in medical research. With perseverance, OMRF can find solutions to many more problems. You just have to believe there are things that can be conquered.

Nancy Yoch, OMRF Donor since 2005

For Norman real estate agent Nancy Yoch, medical research is personal. In 1955, doctors diagnosed her sister, Linda, with polio. With the help of an iron lung, she survived. Later that year, the Salk vaccine became available, paving the way for a country free of polio.

How Yellowstone's hot springs paved the way for DNA testing

Dear Dr. McEver,

I recently took a trip to Yellowstone National Park, and on a tour, the guide said that a species of bacteria used in DNA testing was discovered in a hot spring near Old Faithful. How can a bacteria found in a hot spring play a role in decoding human genes?

Tim Hassen
Norman, Ok

Dr. McEver Prescribes

Sometimes, truth is stranger than fiction. In this case, a species of bacteria discovered in Yellowstone proved key to developing a technique that replicates tiny amounts of DNA. That method is polymerase chain reaction, now a household phrase thanks to Covid-19 and PCR testing.

In 1966, Indiana University microbiologist Dr. Tom Brock was studying microorganisms found in the national park's hot springs. He was particularly interested in what, if anything, could survive at temperatures lethal to humans. His team discovered the bacteria Thermus aquaticus, which thrived in waters above 150°F. They later found the bacteria's enzymes, the proteins that carry out chemical reactions inside a cell, kept working in even higher temperatures.

Nearly 20 years later, biochemist Dr. Kary Mullis developed the PCR method. The technique, which earned the researcher a Nobel Prize, allows scientists to rapidly copy a tiny DNA sample millions of times to identify the slightest traces of genetic material. Today, researchers use it in everything from DNA sequencing and analysis to testing for the presence of infectious agents.

PCR requires putting samples through cycles of extreme heating and cooling. While most enzymes that could be used to replicate samples break down under high temperatures, an enzyme from the Yellowstone bacteria did not. It became the go-to for PCR testing.

Brock's work at Yellowstone was what we call "basic research." Like many OMRF scientists, Brock didn't know precisely where his study would take him. But this single discovery from a hot spring in Wyoming changed the world. It's a perfect example of how science builds on itself, sometimes over decades, to move research forward.

A physician-scientist, Dr. Rodger McEver is OMRF's vice president of research.

FAMILY MATTERS

OMRF’s new president, Dr. Andrew Weyrich, brings a unique perspective to medical research

By Adam Cohen
Photographs by Brett Deering

To understand Dr. Andrew Weyrich, it helps to get to know Sam.

Sam Weyrich, Andy's son, came into this world uneventfully. Doctors administered Apgar tests as soon as Sam arrived. Heart rate: normal. Muscle tone: normal. Respiration, reflexes, appearance: check, check, check.

But a few months into his young life, Sam started crying. Not just typical infant mewling, he wailed inconsolably and nonstop. Then, his parents noticed his eyes weren't tracking light or objects.

Doctors first suspected blindness. But an MRI led to a devastating diagnosis: Sam had been born with a rare condition known as a leukodystrophy.

The myelin sheath, the fatty insulation that covers nerve fibers, hadn't developed properly. Without that protective layer, leukodystrophy patients have decreased motor function, muscle rigidity and eventual deterioration of sight and hearing. The disease is fatal, with no cure and extremely limited treatment options.

"They basically told us, 'Go home and enjoy him,'" says Amy Weyrich, Sam's mother and Andy's wife. "His life expectancy was two years."

The diagnosis understandably staggered his parents. "You always think your children are going to outlive you," says Andy. But he and Amy quickly made a pact. "We decided we were going to try to be phenomenal parents to Sam during his time, however long that was."

That was 21 years ago.

Since that time, Sam – with a lot of help from Amy and Andy, as well as from Sam's older sister, Sarah – has grown up. If you met him, you might observe that Sam doesn't walk or talk. That his limbs are so weak he cannot raise his hands or even grasp objects. That he spends his life in a wheelchair, his every need attended to with great care by his mother and father.

Andy, though, would say you are missing the point.

"Sam has taught us more than we could have ever imagined," says Andy. As their son's life stretched beyond expectations – into elementary school, then his teens, now his 20s – the Weyrichs learned to ignore predictions and, instead, focus on what they could do to improve the odds.

They also grew to understand what it meant to listen in a world where, too often, the loudest noises drown out all others. "Sam has taught us that everybody has a voice," says Andy, "even if they can't speak." Andy and Amy trained their gaze on every dart of their son's eyes, each twitch of his head, to understand his subtle, nonverbal language. It wasn't that Sam wasn't talking; it was simply that the world wasn't listening.

And as Andy and Amy grew to understand their son's messages, they found he conveyed joy in even the tiniest of gestures. "Sam loves everybody. He doesn't distinguish," Andy says. That lesson of unconditional acceptance provided a signpost for Andy in every aspect of his life.

Over time, the Weyrichs also figured out that, despite Sam's fragile shell, he was no egg. He enjoyed adventures, novel experiences. He went skiing and horseback riding, even took a five-day raft trip in the Grand Canyon. "That trip stressed us in a lot of ways," says Amy. "But from the moment we got there, he was on. He loved every minute of it."

Soon after Andy took the job as OMRF's president, he and Amy brought Sam to Oklahoma City. They wanted him to see the place that would become his new home.

On most weekends, Andy takes Sam running. Often, they'll share a pair of AirPods, so that father and son can enjoy the same music.

Following a rafting trip in the Grand Canyon, the Weyrich family is planning a new adventure for their son, Sam, in their new home: adaptive rowing on the Oklahoma River.

> “I’m here to listen. I want to know what our scientists and our community need from OMRF.

But this time, Amy joined them, and they left the music behind. “Andy wanted to talk to him about the place,” says Amy. As they jogged, Andy provided commentary, pointing out landmarks – Scissortail Park, the Wheeler Ferris Wheel, the Devon Tower. Throughout, Sam stayed attentive to his father. “His head was up, he was smiling, he was looking around,” says Amy.

What Sam couldn’t say in words, he spoke with eyes. His grin. The effort it took for him to hold his head up for an hour as Andy pushed him through midtown and downtown Oklahoma City.

Dad, he seemed to say, I couldn’t be more excited for this new adventure.

ANDY GREW UP outside of Columbus, Ohio, the son of an Episcopal priest and a real estate professional. From an early age, he remembers his parents’ commitment to social justice and the civil rights movement. At the age of 5, Andy recalls his family delivering food and supplies to the Black Student Caucus, a group of his father’s fellow divinity students who staged a 19-day lockdown of the school in 1968 that resulted in more Black representation on the faculty and board of trustees and the creation of a Black Church Studies program.

In addition to regularly volunteering at food pantries and homeless shelters, he and his two brothers also devoted a good deal of their extracurricular time to basketball and baseball. All three went on to play baseball at the collegiate level.

Andy attended Baldwin Wallace University in Ohio. As a middle infielder and, eventually, a first baseman, he earned Academic All-American honors. “I wish it was because I’d been a better baseball player,” he says, “but it was really more due to my academics.”

Growing up, he says, math and science had always come naturally to him. “I was good with flashcards, and I enjoyed those subjects a lot.” In college, he majored in biology. He didn’t know exactly where his studies would lead him, so, like many undecided students approaching the end of their undergraduate careers, he applied to graduate school. When he received an offer to join the master’s program in exercise and health science at Wake Forest University in North Carolina, he jumped at it.

There, he focused on cardiac rehabilitation, working with patients recovering from heart attacks, strokes and various procedures. He also spent time with athletes, testing them for exercise performance thresholds. He enjoyed the interaction with patients, he says, “but I discovered my real passion was for the science.” So, he decided to pursue his Ph.D. at Wake Forest’s Bowman Gray School of Medicine.

Harkening back to his days on the diamond, he published his first paper on baseball and kinesiology. “We were looking at how balls came off a wood bat versus an aluminum one,” he says. He also continued to study the physiology of endurance athletes as they pushed their bodies to the edge. Soon, though, those efforts took a backseat to lab work.

In the laboratory, he immersed himself in the mechanics of blood clotting. He earned his doctorate in physiology and pharmacology, then accepted a postdoctoral fellowship at Thomas Jefferson University in Philadelphia. But he didn’t go alone.

In graduate school, he’d begun dating Amy, who earned her master’s in the same program. Another former collegiate athlete – she’d played field hockey at the College of William & Mary – Amy had grown up in New Jersey, just across the bridge from Philadelphia. The couple got a place in New Jersey and married the next year.

> “So much of what we do is built around family. It’s not a me thing or an Amy thing. It’s a we thing.

Each day, Andy commuted into the city, where he studied molecules found in the blood, known as selectins. That work led him to a second fellowship, this time at the University of Utah. And that’s where he first came to the attention of Dr. Rodger McEver.

McEver had joined OMRF a few years earlier, and he, too, studied selectins. He’d established a research collaboration with a group of scientists in Utah that included Andy’s mentor. As part of that partnership, McEver traveled to Utah and sat in on lab meetings.

“I heard Andy present his work in 1993,” recalls McEver, who is now OMRF’s vice president of research. “My impression was that he was very intelligent and had a calm, articulate way of expressing himself.” As is often the case in science, the discussions proved “lively,” says McEver, with researchers challenging each other’s hypotheses and findings. “Andy took feedback well. He would listen to advice and ideas.”

McEver struck up an ongoing research collaboration with Andy, publishing several papers with him over the years. “I thought, ‘This is a sharp guy. He’s going to do well.’”

And he did. Andy shifted his research focus to platelets, cells that circulate in our blood and bind together when they recognize damaged blood vessels. He delved into how platelets communicate with other cells. In the process, he discovered that platelets, previously thought to be inert – “like a sack of glue,” says Andy – actually altered their genetic makeup in different inflammatory diseases. “That meant they don’t just act the same all the time,” Andy says. That discovery had profound implications for managing illness in patients.

It also represented a major shift in how researchers understood blood clotting. The change was so profound that, at first, Andy didn’t even believe his own results. But when he continued to redo his experiments and get the same outcome, a mentor urged him to have confidence in his work. “He said, ‘You have to believe your own data,’” Andy remembers.

Eventually, he did. And not long after, the cardiovascular biology world caught on, too. “I’m amazed to see all the follow-up work people have done. Those initial studies turned out to be super impactful,” says Andy.

Andy published the work in some of the world’s leading scientific journals. “He made a big splash with those papers,” says McEver. “But when you have new observations, you better be sure they are correct.” Decades later, says McEver, the findings have held. And that pioneering work, he says, “opened a new avenue for understanding blood clotting, inflammation and infectious disease.”

On the strength of this work, Andy climbed Utah’s academic ladder, first as a research professor, then as a faculty member who would earn tenure and an endowed professorship. Still, the path forward would not always prove smooth.

AMY AND ANDY HAD their first child, Sarah, in 1998. Two years later, they had Sam. Despite Amy and Andy’s resolve to make the best of the situation, at times, it overwhelmed them. “I remember closing my office door on multiple occasions and crying,” Andy says.

The Weyrichs struggled to understand Sam’s condition and care for their infant son, who, at that time, wasn’t predicted to survive to his preschool years. But Andy also struggled professionally, as his research, while paradigm-shattering, at first failed to garner financial support. “I was still a research professor,” which meant he had no guarantee of continued employment, “so I needed to get funded.” Twice, study sections at the National Institutes of Health rejected his applications for his “R01” grant, a cornerstone award that provides financial support sufficient to run a lab for several years. “I only had one more shot.” Andy reached out to his program officer at the NIH, who asked Andy to send copies of his work. After reviewing the findings, the program officer flipped the light from red to green, funding the grant for four years.

Since then, Andy has enjoyed continuous funding from the NIH, including a prestigious grant known as an R35, a seven-year award established to promote scientific productivity and innovation by providing sustained support and increased flexibility in research. But, he says, that moment at the crossroads never stands far from his mind. “We didn’t think Sam would live. And even though I never lost passion for my work, I had doubts I would be successful as a researcher. Could I make it?” The support he and Amy received, he says, proved crucial. “That’s when our mentors and friends said, ‘We got you.’ That was a turning point.”

Andy has never forgotten what that boost meant, both on a personal and professional level. It’s one of the reasons he’s made mentoring students and research trainees a point of emphasis throughout the balance of his career. “The key is to train the next generation,” he says. “When you see one of your trainees give a talk, get a grant or publish a new finding, that’s one of the most gratifying experiences you can have.”

Dr. Guy Zimmerman, Andy’s former postdoctoral advisor and a longtime colleague in Utah, describes Andy as “an absolutely committed mentor of younger people and developing faculty.” He is, says Zimmerman, “one of the best I’ve worked with.”

With increased funding, over time, he grew his lab to more than 20 people: physician-scientists, Ph.D. researchers, postdoctoral fellows, graduate students, medical students, undergraduate students and technicians. The work they did studying blood clotting touched a multitude of different areas: heart disease, diabetes and stroke. But, mainly, they focused on infectious illnesses and sepsis, the potentially fatal blood condition that infections can trigger.

He published more than 150 research papers, and the University of Utah named him an H.A. and Edna Benning Presidential Endowed Chair, an honor bestowed upon the institution’s top medical researchers. He strove to carry his work from “bench to bedside,” connecting experiments in Petri dishes with patients experiencing medical challenges. That meant testing observations his team made in the lab against blood samples donated by research volunteers.

One of those clinical studies, which examined a therapy currently being used against infection, found evidence that the treatment could also cause tissue damage. He and his team then developed an inhibitor designed to prevent those potentially calamitous side effects. The university licensed the discovery to a biotechnology company, which is now working to create a therapy that could help a range of patients from premature babies to adults suffering from a variety of infectious conditions.

With a well-earned reputation as a collaborative scientist, and one whose work bridged multiple disease areas and connected laboratory researchers with clinicians, Andy eventually joined university administration. A stint helping direct the molecular medicine program led to an appointment as associate dean of research in the health sciences center. Then, in 2016, the university named him vice president for research.

The position oversaw the research portfolio for the health sciences center as well as the entire university, which encompasses 18 different colleges. It also introduced Andy to new realms that included managing regulatory compliance and serving as president of the University of Utah Research Foundation and Innovation District.

As leader of the university’s research community, he spearheaded a series of strategic investments into

Happy Halloween everybody! Sam and i chose to Ghostbusters this year #halloween2020 #disab...

SIBLING REVELRY

Sarah and Sam Weyrich’s shared TikTok account (@SarahAndSamWeyrich) has more than 75,000 followers. The brother-sister duo star in #DisabilityTikTok, where they highlight awareness and inclusion of people with disabilities through dances, costumes and Q&A’s. The siblings look forward to keeping the content going during Sarah’s future visits to Oklahoma from Chicago, where she’s pursuing a career in musical theater.

targeted areas of research. “We created a department of population health,” he says, “and we put money into diabetes, neuroscience, infectious disease and genetics.” He developed new skill sets, working with donors and Utah state officials for funding to support the initiatives. He also made diversity a focus, both within his own leadership team and by supporting new initiatives aimed at changing the complexion of research.

The efforts paid dividends. Under Andy, the university’s total research funding grew from roughly $400 million to almost $600 million annually. Andy loved the work, especially the pieces that linked him with stakeholders not only at the university but beyond.

“Decisions should be community-based,” he says. “I have an open-door policy, and everybody’s voice is important.”

He took pride in what he’d accomplished in nearly three decades in Utah. But he found himself looking to the horizon for a “final step” in his career. Sarah had graduated from college and moved to Chicago to pursue a career in musical theater. Sam, too, had grown up, and he’d soon finish at the school he’d been attending for many years.

They’d built a good life in Utah. Amy, in particular, fretted when she imagined leaving. She worried especially about Sam, about how they’d replace the caregivers and programs that had helped their son beat all the odds.

Still, she knew her husband yearned for a new challenge, an institution to lead. Maybe, she told him, she’d think about it. But only if it’s the right place.

IN UTAH, ANDY had worked closely with Dr. Stephen Prescott. A longtime faculty member at the university, Prescott’s research overlapped with Andy’s, first during Andy’s postdoctoral fellowship, then during his early days as an independent researcher. “Steve was a mentor and a great friend,” says Andy. When Prescott left the university in 2006 to become president of OMRF, Andy kept up with him and his wife, Susan.

Through his work, Andy maintained many other touchpoints with OMRF, collaborating not only with McEver but also with other cardiovascular biologists at the foundation. “OMRF is known worldwide for its strength in this area,” he says.

Following Prescott’s death in May, Andy reached out to McEver. “I asked him kind of candidly, ‘Do you think I’d be a candidate?’” remembers Andy. “And Rod said, in his characteristic way, ‘I think you’d be credible.’”

After Andy applied and interviewed via Zoom, a search committee consisting of a dozen members of OMRF’s Board of Directors and National Advisory Council enthusiastically agreed, selecting Andy as a finalist for the position. When he and Amy came to Oklahoma City in September, they were, he says, “blown away.”

“We couldn’t believe the level of community engagement,” he says. “People from across Oklahoma came just to see us. Everyone seemed to coalesce around the mission of the foundation.” In an increasingly fractious world, he found the

> “Sam has taught us that everybody has a voice, even if they can’t speak.

GUITAR HERO

As a researcher, Dr. Andy Weyrich always worried about where that next grant would come from. Leading research operations for 18 colleges at the University of Utah could also trigger anxiety. Likewise, he understands that running OMRF will bring its share of tensions.

Running, which Andy does almost every day, helps him cope. But since the mid-1990s, he has also found another stress reliever: music.

"On a bet with a friend I was doing research with, we decided we were going to learn how to play guitar," says Andy. He taught himself rhythm guitar, and along with his friend and four others, formed a band. Although Stella, named after Marlon Brando's famous howl in "A Streetcar Named Desire," started out playing original songs, they soon realized that audiences much preferred covers. "We pretty much stuck to what I'd call soft, classic rock," Andy says. In addition to guitar work, Andy occasionally sang. "'Mustang Sally' was my favorite."

The band played more than 100 gigs, mostly at charity events. They had their biggest crowd at the Olympic Village in Salt Lake City during the 2002 Winter Games.

Stella retired early in the 2010s, but Andy still plays for himself. Like all good musicians, he's used his life to inspire his music. "Knowing I'm coming to Oklahoma, I've started playing a little country," he says. Already, he's picked up "some Blake Shelton and Garth Brooks." Toby Keith, Carrie Underwood and Vince Gill can't be far behind.

unified support "refreshing. That's something you can get excited about pretty quickly."

Importantly, Amy agreed. "Everybody we met was genuinely kind. I could also see Oklahoma City was an up-and-coming place." When she toured facilities that served the city's special needs community, she found a variety of resources to help support Sam.

"When we left, I said, 'I hope we get offered this job,'" says Andy, "'because we're coming.'"

The feeling, says OMRF Board Chair Len Cason, was mutual. "We searched for a visionary scientific leader, and Dr. Weyrich was in a class of his own." When the Executive Committee of OMRF's Board of Directors unanimously voted to extend an offer to Andy, he accepted.

OMRF already enjoys "a reputation as home to the best and brightest in research," says Cason. "We think Andy is going to take us to the next level."

IN NOVEMBER, Andy, Amy and Sam visited Oklahoma City. Although he wouldn't start officially at OMRF until January, Andy wanted to hit the ground running. So, he'd come to town to meet with OMRF staff and to help his family get familiar with their new home.

In just a few days, the Weyrichs bought a handicap-accessible van and put a down payment on a house that's "Sam-ready." They also brought Sam to OMRF to introduce him to the senior leadership team Andy will work most closely with. "Family is at the heart of who I am," says Andy. "So, it's important to me that my team gets to know my family."

Sam, in particular, has provided a larger frame for his work. "At first, I think I was doing research for the sake of research." But when his son was born, it transformed an intellectual pursuit into something deeper, more meaningful. "Maybe what we learned could help the next generation of Sams."

That goal – to understand, treat and prevent disease – "is what gets me up and what keeps me going," he says.

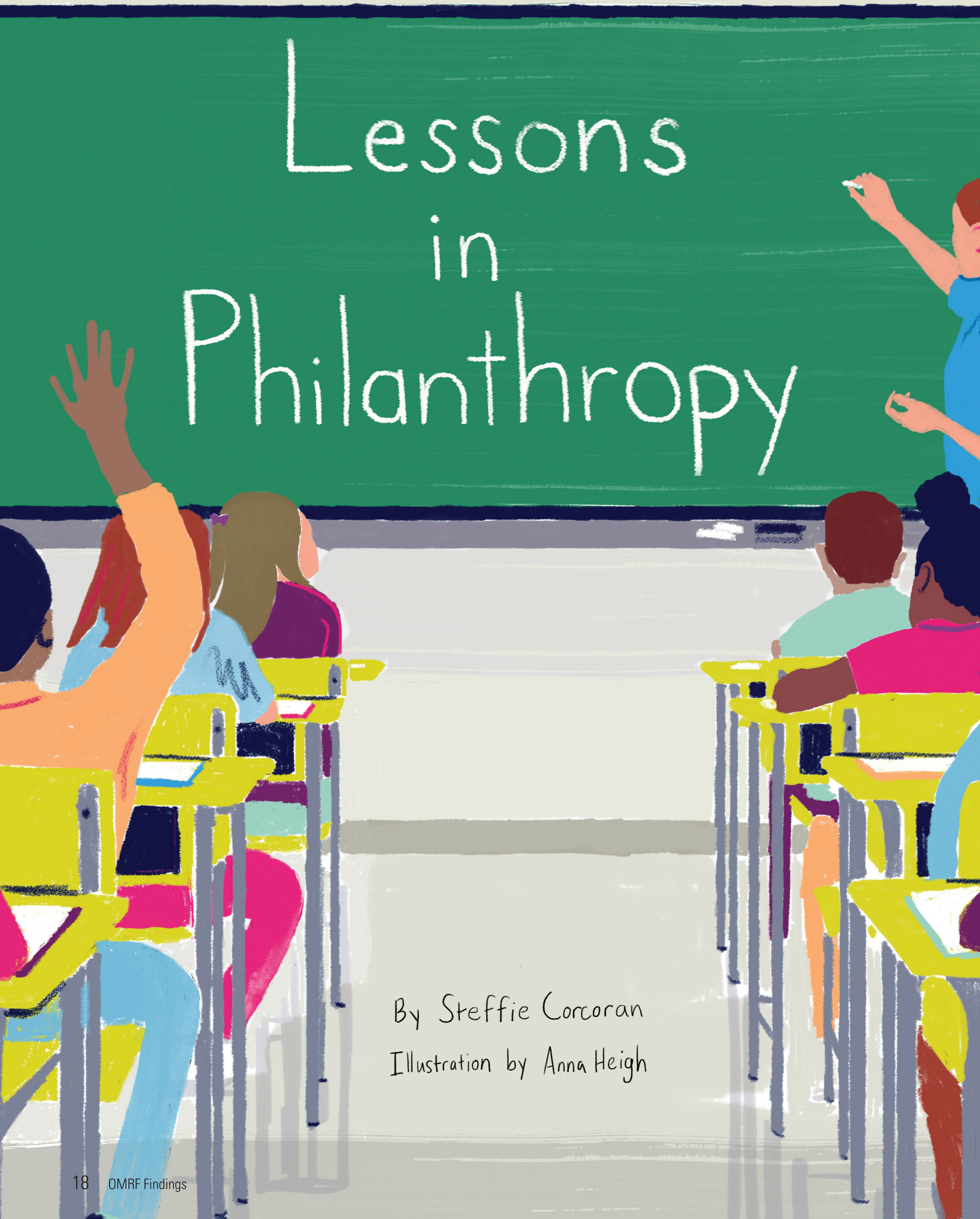
At OMRF, Andy sees a research organization that's already thriving. So, he says, he'll aim "to build on that excellence, to amplify and strengthen." To understand where to focus those efforts, he'll take a page from what he's learned parenting Sam. "I need to get out there and listen." That means seeking input from scientists, staff, Board members, donors, legislators and other members of the community.

The information he gleans from those meetings, he says, will help him sketch the blueprint for OMRF's future. "I want to set us up for continued success. We want to move things forward so that the excellence here becomes a perpetual thing."

It's these sorts of strategic thoughts that will creep into his head when he takes a long run by himself. "I'll think, 'What are those innovative things we can do to get us ahead of the game 10 years down the road?'" Those sweaty, meditative sessions have proven invaluable to Andy throughout his career as a researcher and leader.

Still, those workouts will always take a backseat to another set of runs.

"When I'm out there pushing Sam, and he's smiling and looking around, there's nothing better in this world." ◘



Lessons in Philanthropy

By Steffie Corcoran

Illustration by Anna Heigh

Putnam City Schools has raised millions to support cancer research. And they're not done yet.

The Oklahoman

It started with love. And loss.

The year was 1974, and **Lois Thomas**, a Putnam City High School journalism teacher, was grieving the death of four dear colleagues and the recent diagnosis of the district's superintendent, Leo Mayfield. The common thread? Cancer.

In her youth, Thomas had gone door to door to raise funds to combat polio for the March of Dimes. So, she made up her mind to start a similar effort to fight another disease that touches so many.

Thomas, with the help of fellow journalism teachers throughout the district, organized a change drive, and soon a legion of Putnam City students were canvassing their neighborhoods to fight cancer. When word of the campaign got out, charities deluged Thomas with phone calls, hoping to benefit from the effort. But when she learned that OMRF performed cancer research, “I called them up,” she said in a 2006 interview. “I asked them, ‘What’s the chances of my school collecting money for cancer and giving it all to you?’ They said, ‘Absolutely, you can do that.’ I said, ‘Put me down.’”

Thomas also wanted to ensure none of the funds they collected would be diverted to administrative costs. “The Oklahoma Medical Research Foundation pledged that all of the funds would go to research,” Thomas remembered in a 2003 interview with this magazine. “That’s why every penny we’ve ever collected has gone to OMRF.”

“Mom was a pretty high-energy, get-’er-done kind of person,” says her daughter, Carolyn Churchill. “She wouldn’t stop until it was done and done well. She really did think, ‘If everybody gave pennies, look how much money that would be.’”

Thomas’ brainchild has led to what may be the longest-running school district-cancer research partnership in history. Since an inaugural donation of $24,000, Putnam City Public Schools has raised more than $3.8 million for cancer research at OMRF.

Those funds reflect the efforts of hundreds of thousands of Putnam City students, teachers and staff members. They also point to how one school district has cultivated, nurtured and sustained a culture of giving across multiple generations. In that time, a simple coin drive has mushroomed into much more: a massive effort that includes bake sales, car washes, crazy hat days, dunk tanks, garage sales, carnivals, taco suppers, benefit concerts, 5K runs and countless other student-driven activities.

Thomas’ granddaughter, Becky Landry, remembers her grandmother visiting schools regularly to promote the Cancer Fund Drive after her retirement in 1981. She continued the practice until the spring before her death in 2007.

“She’s the only person I know who could get everybody in that gym to be quiet,” says Landry, who taught at Putnam City West. “She’d just put her fingers up to her lips, and you could hear a pin drop with all the kids in there.” Landry also recalls the competitive spirit of the Cancer Fund Drive, and her grandmother’s irritation any time PC West’s Patriots raised more than her beloved Pirates of PC “Original.”

Lois Thomas sparked a movement that has led to millions in support for cancer research at OMRF.

Photo by Steve Sisney

In one of the drive’s early years, cafeteria staff sold homemade cinnamon rolls and donated the proceeds, baking their way to a $6,000 contribution. Since the 1980s, the district has contracted with Sodexo for cafeteria services, and PC Superintendent Dr. Fred Rhodes recalls a year when dozens of Sodexo staffers signed up for the Cancer Classic run. Like every other event in the drive, proceeds from the annual 5K go to OMRF.

Fundraising reaches a fever pitch every spring at the district’s three high schools, when students participate in a weeklong series of events culminating in a carnival. It’s easy to understand why, considering the collective energy of the more than 5,000 students that attend PC Original, PC West and PC North.

“I didn’t know what it was or what to expect,” says Brett Bradley, lead principal at PC Original. “And then when I experienced my first one, it was amazing.”

Over the years, he says, the Pirates have developed a formula that works. Think “Crazy Olympics” competitions between students and faculty. Or tugs of war, relays and “chariot” races, where two people pull a third splayed on a sheet. Food trucks and restaurant vendors add to the festivities – and fundraising.

After Covid-19 forced carnival cancellations the past two school years, students are working hard to bring the tradition back in spring 2022. Seniors Shyla Woody and Kaleb Whitaker are helping to lead this year’s campaign at PC Original. Both have a personal stake.

“When I was in middle school, my mother was diagnosed with stage 3 breast cancer,” says Woody. “It really encourages me to do more. I could see how she struggled.”

Whitaker agrees that fundraising doesn’t feel like someone else’s job when it comes to a deadly disease that affects millions upon millions. "I know countless people at this school who have either dealt with somebody having cancer or dying of it," he says. "My godmother died of lung cancer right before I entered high school, so to bring awareness to it made me happy and made me want to insert myself in it."

Michael Hardesty, the school's activities director, oversees the work of student organizers like Woody and Whitaker. Each year, he says, the Pirates put together a paper chain link with the names of loved ones affected by cancer. "It usually goes clear around the gym floor," he says. "Everybody knows somebody."

The millions PC Schools has donated to OMRF over the past four-plus decades supports scientists in multiple research programs across the foundation. In a dozen labs, OMRF researchers work to unlock cancer's mysteries. One of those labs is Dr. Gary Gorbsky's, whose experiments in the Cell Cycle & Cancer Biology Research Program help illuminate what goes wrong in cancer by understanding how healthy cells typically function.

"We're trying to write the shop manual about how the normal cell works," says Gorbsky, who holds the W.H. and Betty Phelps Chair in Developmental Biology. "Cells are so incredibly complicated. We have a lot more to do."

Scientists at OMRF also focus on translating their experiments into novel experimental treatments for cancer. Dr. Rheal Towner, director of OMRF's MRI facility, has been studying brain tumors for the past 15 years. He's no spy, but his collaboration with fellow OMRF researcher Dr. Robert Floyd resulted in an experimental compound partially named for one.

"The drug is called OKN-007," says Towner. "The 007 was just for fun."

Floyd originally developed the compound decades earlier in hopes it would help treat strokes. That effort proved unsuccessful, but when he learned Towner had developed a model to study tumor growth in glioblastoma, the most aggressive form of brain cancer, the two joined forces.

Working with Dr. James Battiste, a neuro-oncologist at the University of Oklahoma Health Stephenson Cancer Center, the team of scientists eventually made an important discovery. When the experimental drug was combined with the usual standard of care for glioblastoma, OKN-007 prevented the fast-moving chemotherapy resistance commonly associated with the drug temozolomide.

In clinical trials in patients, says Towner, "We're now extending overall survival beyond 22 months with that combination," nearly doubling the usual life expectancy after a glioblastoma diagnosis. Some patients, says Towner, are now cancer-free. "Enthusiasm for OKN-007 is very high," he says.

Since 1979, OMRF has thanked its youngest philanthropic partners through the Putnam City Junior Scientist Program, opening its laboratory doors to students from each of the district's schools for a day of onsite learning and discovery. OMRF has also welcomed 27 students from PC Schools to its Sir Alexander Fleming Scholar Program. Selected from among Oklahoma's most promising young scientists, Fleming Scholars undertake eight weeks of paid, intensive summer study in OMRF's world-class research laboratories. On the last day of the program, the scholars formally present their work.

PC Superintendent Rhodes never misses those talks. "We've had students I knew as elementary students who are now young adults," he says. "They're presenting their research, and it's just awesome."

Rhodes' own philosophy has been integral to strengthening the PC-OMRF partnership in recent years.

"What we learn in school is so much more than the reading and math and writing and academics we get grades for," he says. "Our job as educators is to foster within a child everything we can to prepare them for their future. If we can create the desire within a child to give back to the community, then I feel like we have accomplished so much more. OMRF fits that."

And to think, he says, "It started with one teacher."

For four decades, Putnam City students have visited OMRF labs to get hands-on with research during Junior Scientist days.

The Putnam City Cancer Classic 5K is set for April 2022. Visit omrf.org/run for more information.

STRANGE THINGS

Former OMRF intern Bartees Cox Jr., a.k.a. Bartees Strange, hits it big as a rock 'n' roller

When Bartees Cox Jr. joined OMRF as an intern in the Department of Public Affairs in 2011, his energy and enthusiasm immediately struck Jenny Lee. "He wanted to learn and try everything," remembers OMRF's creative director. "He was 100% gung-ho about whatever we asked him to do."

That can-do attitude stuck after Cox, who moved to the state in elementary school and graduated from Mustang High School, left the University of Oklahoma for Washington, D.C. "Everyone around me seemed to have gone to Harvard or Yale," he says. "But I didn't let it intimidate me." Instead, he landed a series of positions doing communications work on climate change, the labor movement and technology policy, including a stint as a press secretary at the Federal Communications Commission.

A self-taught musician, Cox had played in bands throughout college. In Washington, though, that initially fell by the wayside. "I needed to focus on work, on making my parents proud," he says. But the desire to make music kept gnawing at him. So, he bought a guitar. In his spare time, he picked at it, wrote songs. He was, he says, "looking for an awakening, some community to be a part of."

He found it when he moved to New York. There, he discovered "people more like me, artists who also had day jobs." A Black musician whose work draws on diverse sources – funk, country, hip-hop, jazz and indie rock – Cox "fell in with this group of Black artists who were making the best stuff." They'd play together after work, at first in one another's homes and then in local shows.

Cox continued doing PR to pay the bills, but, increasingly, his "hobby" nosed its way into his 9-to-5 existence. He built a studio in his home and began recording and producing, writing new songs and honing his skills as a singer, drum programmer and sound engineer. He'd miss a few days of work here, a week there, as he went on the road to play shows. After first scaling back to a three-day workweek in the pandemic, he made a big jump: He quit his day job.

Under the stage name Bartees Strange, he'd already released an EP of re-imagined covers of songs by The National, a longtime favorite band, which had garnered critical acclaim. The plan, he says, was to follow that group's blueprint: "I'd make records and get one fan at a time for the next 15 years."

In October 2020 he dropped "Live Forever," his first album of original work, and that incremental blueprint fell by the wayside. A genre-defying collection that included songs with Oklahoma-inflected titles like "Boomer" and "Mustang," Rolling Stone magazine sang its praises and dubbed Strange an "Artist You Need to Know." He performed on "Late Night with Seth Meyers" and recorded a Tiny Desk Concert for National Public Radio. And when Covid-19 pandemic restrictions eased, he became a sought-after act, playing shows at venues like the Mercury Lounge in

Photo by Julia Leiby

Photo by Ashley Gelman

Bartees Strange will return to Oklahoma in May with one of his signature high-energy shows.

New York City and the Pitchfork Music Festival in Chicago.

Strange went on the road, touring with indie rockers Phoebe Bridgers, Lucy Dacus and Courtney Barnett. Walking on stage to open for Bridgers, he says, was eye-opening. "Our biggest show before that was like 80 people. And now we were performing for an audience of 4,600." Far from being nervous, he says he "felt super prepared. I had been waiting for this my whole life."

Not surprisingly for someone who played college football (at Kansas' Emporia State University before transferring to OU), Strange punctuates his live performances with jumps and other athletic displays. "I try to put on a very exciting show. I want to leave it all on the field," he says.

He says his days at OMRF still represent a special time in his life. At the foundation, he wrote pieces about the first Black students to participate in OMRF's Sir Alexander Fleming Scholar Program. An interview he did with one former scholar ran in this magazine, while a press release he wrote about another got picked up by media outlets across the state. "That was big for me," he says. "When that story ran in the paper, it was the first moment where I thought, 'I can do things.'"

Medical research hasn't found its way into his songs, at least not yet, but Strange says OMRF's labs aren't so different from his studio. "Anything that has a process is like science. So, each musician kind of becomes their own scientist."

For 2022, Strange has lined up an ambitious touring schedule. Among the more than two dozen stops will be a May show at Oklahoma City's historic Tower Theatre.

And what would the OMRF intern Bartees Cox Jr. think if he could somehow attend that performance by his future self? "He'd be like, 'Wow! I can't believe he did that. Keep going!'"

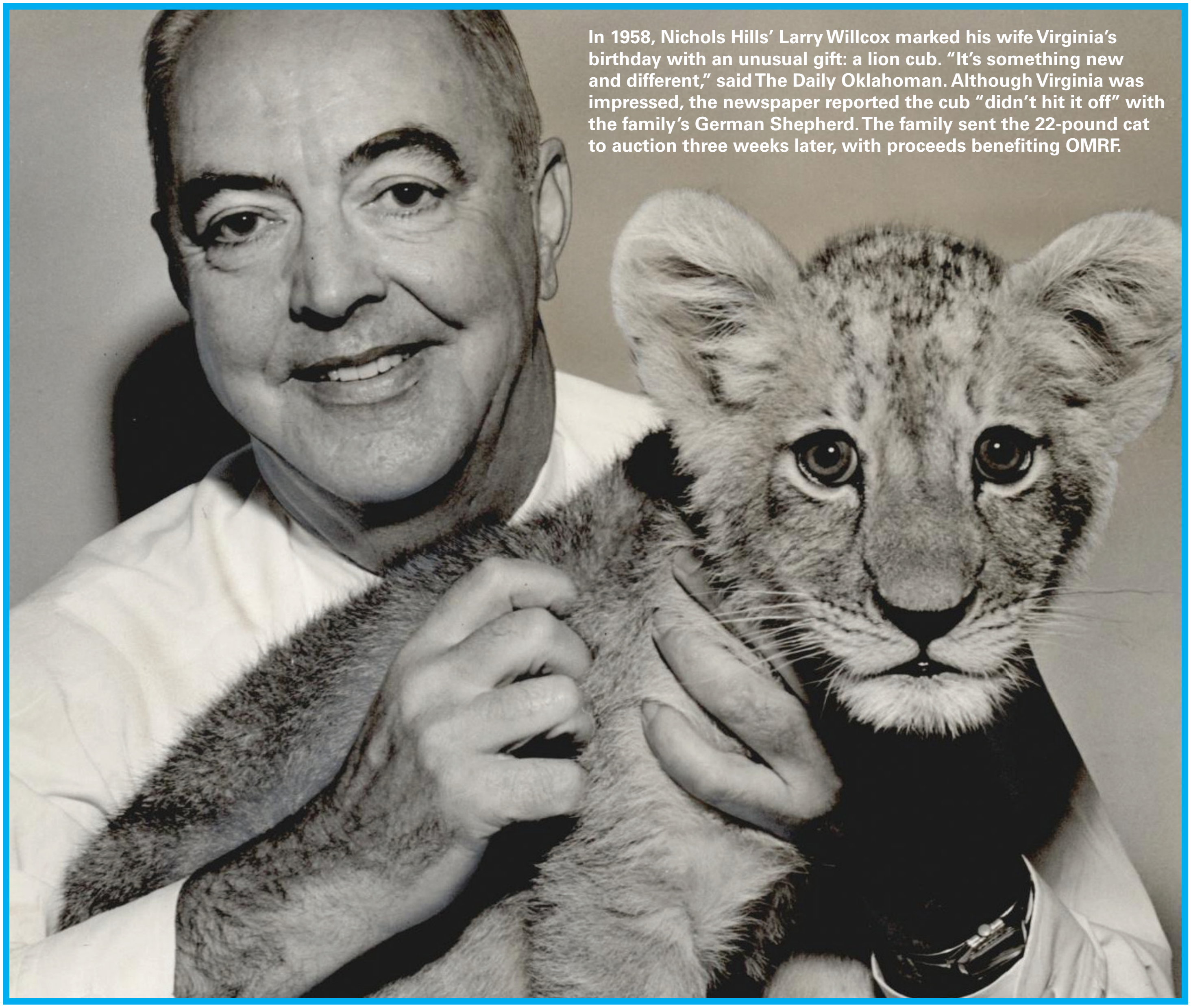
75 YEARS OMRF

825 N.E. 13th Street
Oklahoma City, OK 73104

/OMRFOK @OMRF /OMRF

Nonprofit Org.
U.S. Postage
PAID
Permit No. 639
Oklahoma City, OK

Roaring for Research



In 1958, Nichols Hills' Larry Willcox marked his wife Virginia's birthday with an unusual gift: a lion cub. "It's something new and different," said The Daily Oklahoman. Although Virginia was impressed, the newspaper reported the cub "didn't hit it off" with the family's German Shepherd. The family sent the 22-pound cat to auction three weeks later, with proceeds benefiting OMRF.