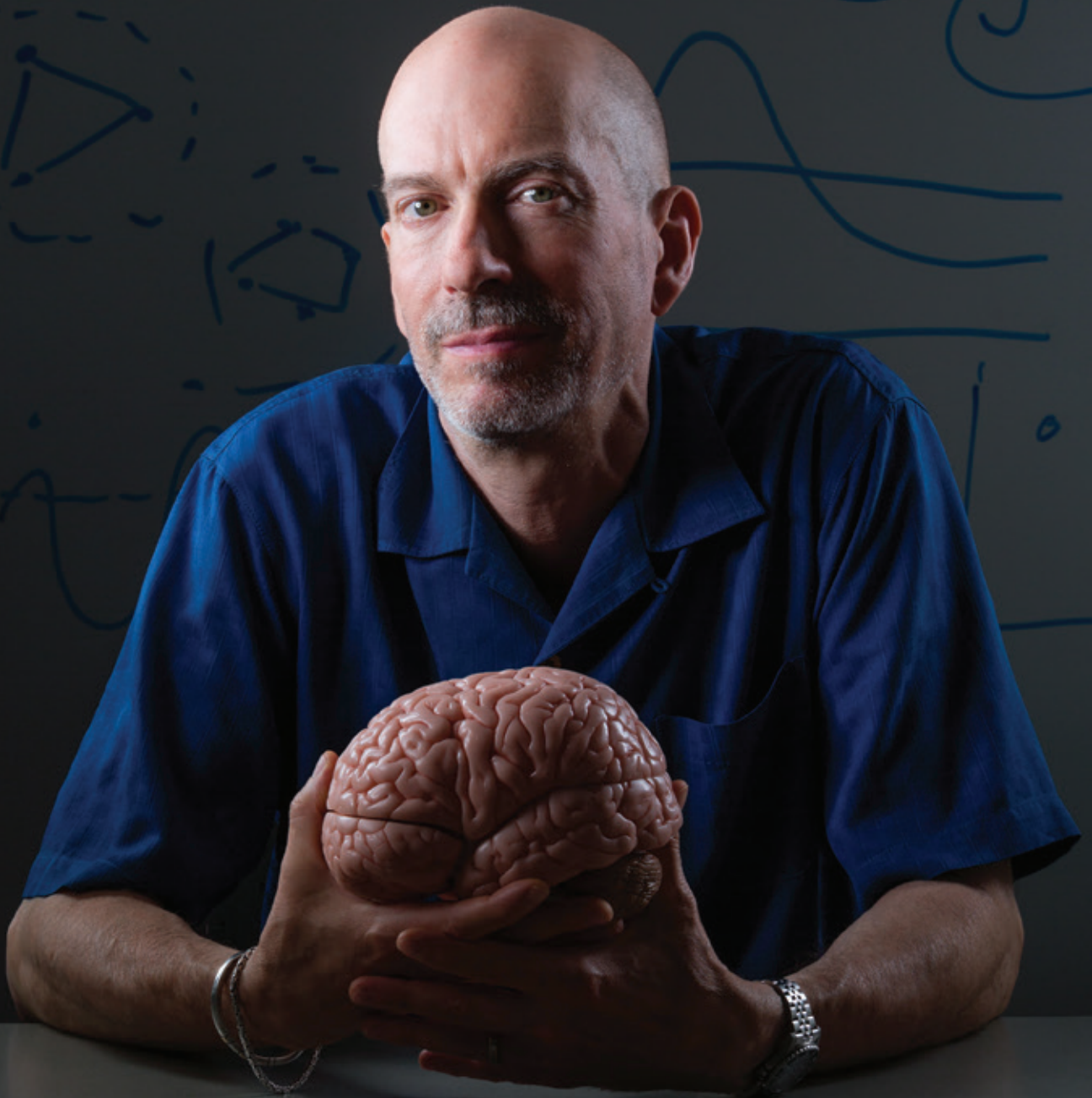


SPRING 2017 | Hope for Foster Kids | Reinberger Children's Library Center | New Gameday | Mosquito-Borne Diseases

KENT STATE

MAGAZINE



Get Smart

Multitasking is a myth, says MIT neuroscientist Earl Miller, BA '85, who is researching technologies that may one day increase the capacity of the brain's working memory. In the meantime, he's got a few tips to help focus your mind. **SEE PAGE 20**

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On the cover: MIT neuroscientist Earl Miller, BA '85, is exploring how to expand our brainpower. See page 20.

COVER PHOTO: JASON GROW

FEATURES

10 Dangerous Buzz

The Zika epidemic may have peaked, but it will play out for years as researchers learn more about how the virus is transmitted and how long it remains viable. Kent State experts are using past and present experiences with mosquito-borne diseases to prepare public health students for future outbreaks. Plus, how you can protect yourself and your family from mosquito bites.

BY BETH SKWARECKI

18 Fostering Hope

Senior public relations major Keri Richmond was in and out of the foster care system almost from birth. Now she's fighting for other foster kids to have a better experience.

BY KERI RICHMOND '17

20 Attention, Please

With his research into the brain's prefrontal cortex, MIT neuroscientist Earl Miller, BA '85, may someday be able to increase the capacity of our conscious minds. Until then, he has advice on why multitasking doesn't work and how to focus on the task at hand.

BY ADAM PIORE

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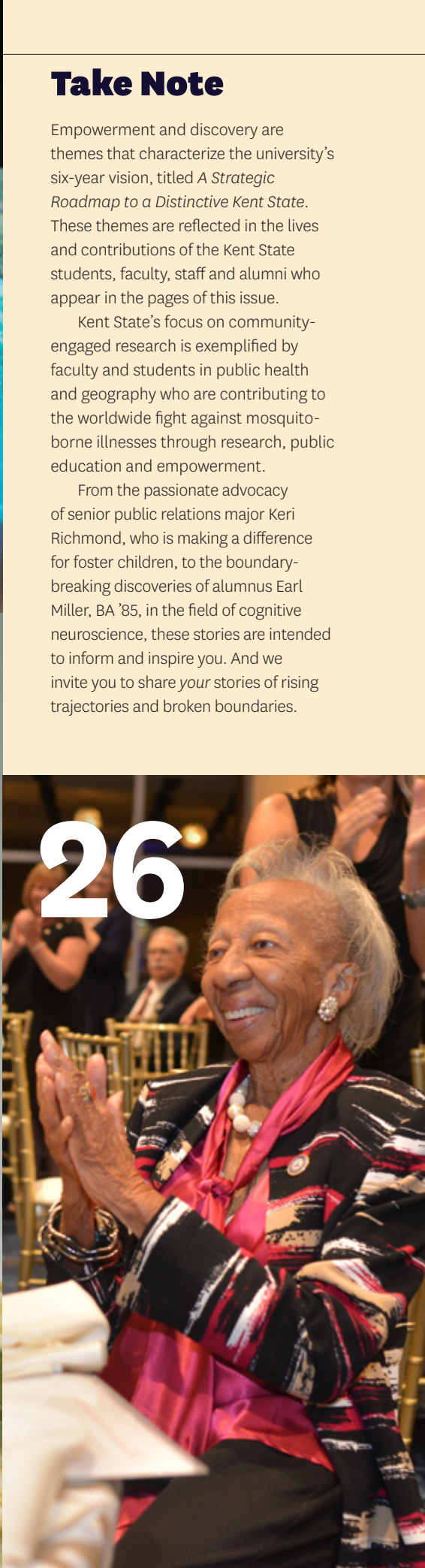
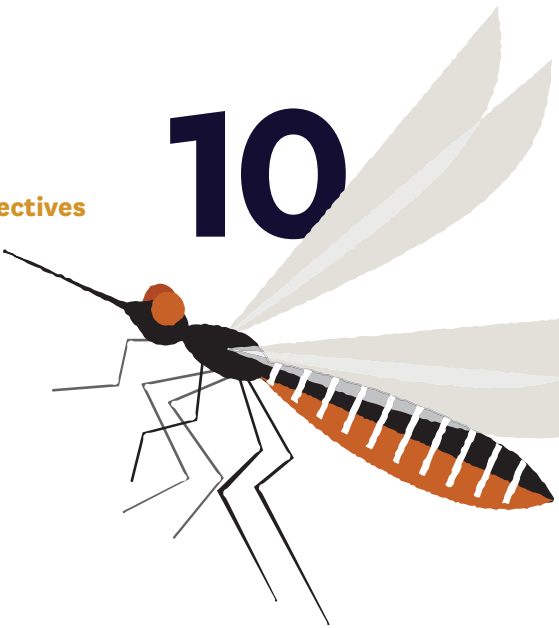
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Take Note

Empowerment and discovery are themes that characterize the university's six-year vision, titled *A Strategic Roadmap to a Distinctive Kent State*. These themes are reflected in the lives and contributions of the Kent State students, faculty, staff and alumni who appear in the pages of this issue.

Kent State's focus on community-engaged research is exemplified by faculty and students in public health and geography who are contributing to the worldwide fight against mosquito-borne illnesses through research, public education and empowerment.

From the passionate advocacy of senior public relations major Keri Richmond, who is making a difference for foster children, to the boundary-breaking discoveries of alumnus Earl Miller, BA '85, in the field of cognitive neuroscience, these stories are intended to inform and inspire you. And we invite you to share *your* stories of rising trajectories and broken boundaries.

EDITOR
Jan Senn
magazine@kent.edu
DESIGN
Melissa Olson
EDITORIAL INTERN
Lauren Rathmell '17

STAFF PHOTOGRAPHERS
Bob Christy '95
Jeff Glidden '87
Melissa Olson

STAFF CONTRIBUTORS
Emily Morris
Ashley Whaley '06, MEd '12

Read *Kent State Magazine* online at www.kent.edu/magazine. To comment or change an address, please email magazine@kent.edu or call 330-672-2727.

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via **INSTAGRAM**

"Sunrises make my soul sing.
#sunrise."
Marcella c
@rawr_cell

We'd like to feature photos that highlight favorite aspects of all Kent State campuses in upcoming issues of *Kent State Magazine*. So we can see your best shots, please use the hashtag #KentState on Instagram or email your photos to magazine@kent.edu. Thanks!

via **EMAIL**

Maps and Memories

Delighted to see the magazine highlight Kent State's hidden treasure, the Map Library ["KSU Collections" fall 2016]. I have fond memories of pouring over (and filing!) the Sanborn Maps and learning from Mr. Ed Hall as a work-study student. That experience compelled me to pursue a minor in geography.

DANA HANCHIN, BA '91
Philadelphia, Pa.

In Touch

Thank you, *Kent State Magazine*, for the new format, much more interesting content and more informative writing approach. It results in my feeling much more "in touch" with the university. Best regards,

TIMME HELZER, PhD '72
Portland, Ore.

International Voices

I just read the fall 2016 *Kent State Magazine*, and I loved the cover and the section "International Voices." The portraits are awesome, and I really enjoyed reading about all these Kent State people!

TIANJUN (TONY) SHEN, MED '12
Shanghai, China

Recollections

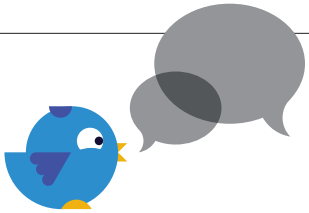
I appreciate receiving the magazine regularly. I am proud to be a small part of KSU, one of the greatest academic experiences in my life. Musselman Hall, the first one I moved into in 1968, was my second home. I still recall the exceptional academic atmosphere in the campus. For me, from faraway Asia, the walk from the small group housing to class along the path through the rolling hills was fantastically serene all through the fall, winter and spring. I hope and pray for the academic glory and the legacy of this green campus: Kent State, where the action is.

 **THONGCHAI CHOOCHUANG, MPA '70**
Bangkok, Thailand

We want to hear from you!

Respond to magazine content or comment on topics related to Kent State by writing:
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P.O. Box 5190,
Kent, Ohio 44242-0001
or magazine@kent.edu.
Responses may be edited for style, length, clarity and civility.

Visit us online
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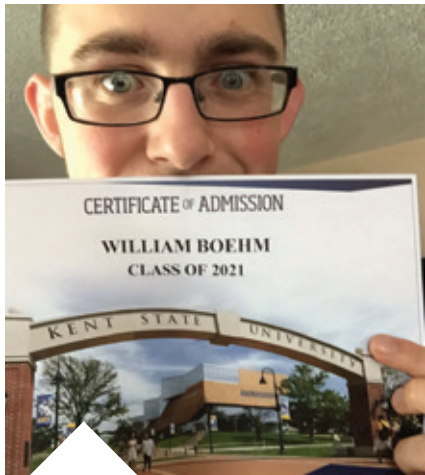


via **TWITTER**



Julian Edelman wears the same Kent State shirt to practice everyday.
Doug Kyed | @DougKyed

We do not live in a post truth world. Facts matter. Reporting matters. The truth matters.
#JMCForward
Andrew | @keiperjourn



I'm the newest golden flash!
@KentState #kentstate2021
Will Boehm | @Will_Boehm_

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Our Path Forward

At the start of 2017, we learned that Kent State's application to have the May 4, 1970, site designated as a National Historic Landmark was approved by the U.S. Secretary of the Interior. This recognition elevates the importance of that day and its aftermath in the history of the United States. It comes after a long journey; one in which members of this remarkable university community, including dedicated faculty and devoted members of the May 4 Task Force, persisted through periods of high emotion and phases of healing that spanned more than two generations of students, faculty, staff and alumni of Kent State University.

As we blend the memory and meaning of this journey with our current vision and promise, our faculty members are assembling in interdisciplinary research institutes and centers to find solutions to some of the world's most intractable problems. We are renewing our global family's commitment to host critical conversations on conflict resolution and peace. By embracing this role, Kent State has the opportunity to influence national and international narratives; to make contributions that only emerge when teams of scientists and artists, designers and technology developers work together. We believe the greatest discoveries and declarations of the future will occur as collaborative, interdisciplinary teams convene around a common mission.

Our new **Brain Health Research Institute** is one example of this vision's momentum. The institute convenes more than 40 faculty whose fields of study include neuroscience, stress/traumatic brain injury, learning strategies, neurodegenerative disorders, cognition in youth and the elderly, substance abuse and addiction, exercise/wellness and cognition, and mindfulness and integrative health. As an interdisciplinary team, our faculty is ideally positioned to compete for grant funding to support research in areas such as mindfulness-based stress reduction, post-traumatic stress disorders, and Alzheimer's and Parkinson's diseases.

We are convening other teams in materials science (including the Liquid Crystal Institute), environmental science and design, healthy communities, and global understanding (featuring our new School of Peace and Conflict Studies).

Kent State's journey is marked by the meaningful engagement of alumni, students, faculty, staff and friends who frame and shape this university's distinctive character and rising trajectory. I look forward to working with the entire Kent State community as we continue to facilitate conversations that will illuminate and elevate minds, lives and civil society.

Beverly J. Warren, President

Email: president@kent.edu, Twitter: @PresBWarren

We believe the greatest discoveries and declarations of the future will occur as collaborative, interdisciplinary teams convene around a common mission.

We encourage our students to become engaged citizens who make a difference in our world. To do so, they need to understand—to be humbled by—the magnitude of humanity's challenges."

ROTARY CLUB OF WOOSTER, OHIO, JANUARY 9, 2017



Beverly Warren @PresBWarren · Jan 21
Thanks for cheering our Golden Flashes to victory! #unleash ⚡💙
@KSUAlumni & @ksumgf

Libby Laubert @LibbyLaubert
@PresBWarren @KentStAthletics thanks for a great game 💙💛⚡



BOB CHRISTY '95

News Flashes

From research to real world: Kent State experts noted in the media

CHECK IT TWICE

“As a general rule, blood pressure fluctuates throughout the day—it hits its lowest point around bedtime and its highest when you wake in the morning, says J. David Glass, PhD, a circadian biologist at Kent State University. If you’re keeping your eye on your blood pressure to help your doctor decide whether you need medication, you could get an inaccurate picture by taking your reading just once a day. ‘If you’re measuring it yourself, it’s best to do it in the morning and evening,’ Glass says, ‘Be sure to do it at the same time each day—don’t bounce around.’ Taking the two readings could make a difference between your doctor prescribing blood pressure drugs and advising you to stick with diet and exercise, he says.”

—“The Very Best Time to Do 14 Common Healthy Habits, According to Science,” *Reader’s Digest*

PICK UP THE PACE

“Researchers at Kent State University say cell phones might actually be bad for your health. It’s not the cell phone itself, but how and when it is used, say Jacob Barkley, PhD, and Andrew Lepp, PhD [who observed hundreds of students as they walked through a marked area]. ‘If they were using their phone to talk or text for the entire portion of the walkway . . . we saw about a 10, 12 percent reduction in walking speed,’ Barkley said. . . . ‘If [walking] is your only form of exercise and you are using the phone while doing it, you are reducing its benefits,’ Lepp said.”

—“Kent State study finds cell phone’s effect on walking is bad for your health,” *Fox 8 Cleveland*, November 4, 2016



Student Approved

Kent State’s number one priority, as listed in its strategic roadmap, is “students first.” President Beverly Warren recently received an award for her efforts reflecting that emphasis.

At an awards banquet in St. Louis, Missouri, the National Association of Student Personnel Administrators (NASPA) presented her with the 2016 NASPA Region IV-East award for her outstanding performance as a university president in advancing the quality of student life on campus by supporting student affairs staff and programs.

“President Warren’s students-first focus permeates her efforts to improve the quality of the student experience,” says Shay Davis Little, PhD, Kent State’s vice president for student affairs, who coauthored the nomination with a student. In it she highlighted the university’s campaign

to raise graduation and retention rates, the formation of a unified undergraduate student government across all Kent State campuses and the creation of a dialogue series, KENTtalks, to promote freedom of expression and civil discourse.

She noted Warren’s collaborative decision-making and accessibility to students via social media. After receiving a congratulatory tweet (#welldeserved), Warren tweeted back: “It is a distinct honor to have been selected for this award.”

With Warren as president, there’s a “change in the air” on all Kent State campuses, says KSU Undergraduate Student Government president Samuel Graska. “The culture on campus reflects [her] leadership.”

campus **QUOTE**

“There’s an old African proverb that says, ‘From afar, I thought he was a monster. When he got closer, I thought he was an animal. When he got even closer, I realized he was a human being. But when we were face to face, I realized he was my brother.’ Distance demonizes. But when you’re face to face, it’s hard to hate up close.”

DAVID ANDERSON, DPhil, founder and president of the BridgeLeader Network, keynote speaker at Kent State’s 15th annual Martin Luther King Jr. Celebration, January 26, 2017

Cool Course

Course number: WMST 20095

Semester: Spring 2017

Title: Hillary Clinton Case Study—Perspectives on Gender and Power

Instructor: Suzanne Holt, PhD, professor, coordinator of Women’s Studies

Description: Set up as a case study, this special topics course looks at Hillary Clinton, beginning with the presidential race. Students do both individual inquiries and group/collective studies of such topics as gender, power, high-stakes contests, media perspectives, demographics, misogyny and backlash.

Film: *Primary Colors*

Readings: Required readings cover academic papers, press coverage, post-election analyses and third-party-authored works on Hillary Clinton. Optional texts from the suggested book list include Clinton’s memoirs, *Hard Choices* (2014) and *Living History* (2003).

Projects: Throughout the course, students will serve on panels, discuss weekly themes and prepare individual case studies for presentation near semester end.

Purpose: The course places Hillary Clinton in context. The focus is not only on the facts of her career and races for the U.S. presidency, but also on what’s been said and written, how “the people” finally voted. We lived through this—and won’t soon forget it—but few would claim to fully understand it. Clinton essentially disappeared as a real woman, replaced in public imagination by media representations, age-old stereotypes and insinuating memes.

Outcome: By highlighting Clinton as both a cultural and political figure, students will be able to better recognize the deep, historical roots of sexism and the struggle for women—even powerful women—to overcome ingrained ideas of their natures and capabilities.



note**WORTHY**

Kent State University was recognized for several achievements recently, including:

- **Tier One Executive MBA Program Global Ranking**
by *CEO Magazine*
- **#1 of 50 Best College Dining Experiences**
by College Rank
- **#3 of the Top 50 Fashion Design and Fashion Merchandising Schools and Colleges in the U.S.—2016**
by Fashion-Schools.org
- **#7 of 10 Best “Hidden Gem” Music Schools**
by Music School Central
- **#19 of the Top 20 Graduate Programs in Library and Information Studies**
by *U.S. News & World Report* 2018 Best Graduate Schools
- **#20 of 245 Top Online Graduate Education Schools Nationwide**
by SR Education Group



BOB CHRISTY '95



Nationally Significant Site

Students gather at the site where one of four students was killed on May 4, 1970, during a student protest of the Vietnam War. On January 11, 2017, then U.S. Secretary of the Interior Sally Jewell announced the designation of the **May 4, 1970, Kent State Shootings Site** as a **National Historic Landmark**. (See President Warren’s column on page 3 for more about this recognition.)

flash **FORWARD**

A Brand New Gameday

Home is where the hype is! The Memorial Athletic and Convocation Center (MACC) was packed with a sold-out crowd of 6,327 fans on January 21, when Kent State Athletics unveiled a new “Gameday Experience” as part of its rebranding launch.

New gameday activities and additions were revealed at the Kent State men’s and women’s basketball games against the University of Toledo—and the men’s team rolled to an 85-61 win over Toledo and the women’s team beat them 70-60.

“When you have an unbelievable atmosphere like this, how can you not play as hard as you can?” says men’s basketball head coach Rob Senderoff.

Highlights from the games include:

1. STAND WITH KSU Prior to singing “The Star-Spangled Banner,” student leaders and student groups circle the court and men’s basketball team members select fans from the crowd to stand with them in solidarity during the singing—a new tradition that began at the home-opener.

2. HYPE VIDEO After President Warren leads the crowd in a countdown, the new basketball “Unleash” video plays on screens that drop from the ceiling in the middle of the court. The video’s finale has fans shining the flashlights on their cellphones and chanting, “Let’s Go Kent!”

3. MACC MANIACS Spirited students rip open their outer yellow T-shirts to reveal blue “Unleash” T-shirts just prior to tip-off of the men’s basketball game.

4. MACC LOBBY MAKEOVER As Golden Flash fans enter the MACC, they are greeted by cheerleaders, balloons and a brass band. Newly designed banners and lighting add to the festive feel.

5. MACC ENTRANCE MAKEOVER New exterior lighting and bold banners highlight the MACC as basketball fans head in.

6. WOMEN WIN Kent State women’s basketball guard Alexa Golden shoots a fadeaway jump shot in the game against the Toledo Rockets.

7. MEN WIN Senior forward Jimmy Hall ducks under a Toledo defender on his way to the basket and a game-best 27 points, pushing him into the list of Kent State’s top-10 scorers of all time.

View the “Unleash” video at www.kent.edu/magazine/unleash.



PHOTOS BY JEFF GLIDDEN '87 AND BOB CHRISTY '95





1



2



3



4



5



6



7

flash **FORWARD**

March Madness

Kent State men's and women's basketball teams both had stand-out seasons this year.

As Mid-American Conference East Champions, the Kent State women's basketball team headed to the Women's National Invitation Tournament (WNIT), squaring off against the University of Michigan Wolverines at the Crisler Center arena in Ann Arbor, Michigan, on March 16. The Golden Flashes put forth an impressive second-half effort, but ultimately fell 67-60 to a tough Michigan team in the first round.

"I don't think I've ever been as proud of a team as I am of this team and what they've been able to accomplish this season," says women's basketball head coach Todd Starkey. "We made a statement about who we are, and that we won't go down without a fight."

The Kent State men's basketball team won the Mid-American Conference Men's Basketball Tournament (see outside back cover), earning a bid to the Big Dance—the NCAA Men's Basketball Tournament. KSU's 14th-seeded team played third-seeded UCLA close in the second half, but fell to the Bruins 97-80 in the first round at the Golden 1 Center in Sacramento, California, on March 17.

"I couldn't be more proud of how hard we fought throughout the entire game and for the season we had this year," says men's basketball head coach Rob Senderoff.

Glimpses from both games include:

1. WNIT Kent State senior guard and Mid-American Conference Player of the Year Larissa Lurken drives around a Michigan defender during the first round of WNIT.

2. NCAA Kent State guard Jaylin Walker speeds around UCLA defender Lonzo Ball during the first round of the NCAA Tournament South Regional in Sacramento, California.

3. FLASH FANS Kent State fans get fired up during the WNIT game against the University of Michigan in Ann Arbor.

4. GOOD SHOT Larissa Lurken makes a foul shot against the Wolverines during the second half of Kent State's WNIT matchup.

5. ON THE MOVE Kent State senior guard Jon Fleming outmaneuvers a UCLA defender.

6. HEADING OUT The Kent State women's basketball team hits the floor for warmups at the Crisler Center in Ann Arbor.

7. BAND FAN A member of the Kent State Marching Band shouts support during the first round of the men's basketball NCAA Tournament South Regional.

View a celebratory video at www.kent.edu/magazine/MarchMadness.

DANGEROUS BUZZ

by Beth Skwarecki
illustrations by Melissa Olson



FIG. 1:

Family: Culicidae
Genus: *Aedes*
Subgenus: *Stegomyia*
Species: *Ae. aegypti*

As stories about Zika and other mosquito-borne illnesses make the news, Kent State experts prepare students to deal with future outbreaks—and share facts to help calm your fears.

Zika. Dengue. West Nile. Malaria. When diseases like these hit the headlines, attention turns to the ferocious creature causing these outbreaks that threaten human health—the lowly mosquito.

Amy Krystosik, PhD '16, an epidemiologist and former graduate assistant in Kent State's College of Public Health, spent six months in 2015 and 2016 stalking this six-legged menace in Cali, Colombia, a tiny camera tucked in her hand. Krystosik and her guide for the day—usually the municipal secretary of health or a concerned citizen who wanted to fill her in on what was going on in the neighborhood—would meet in the early hours of the morning, the safest time to be in some of the notoriously violent areas she was surveying.

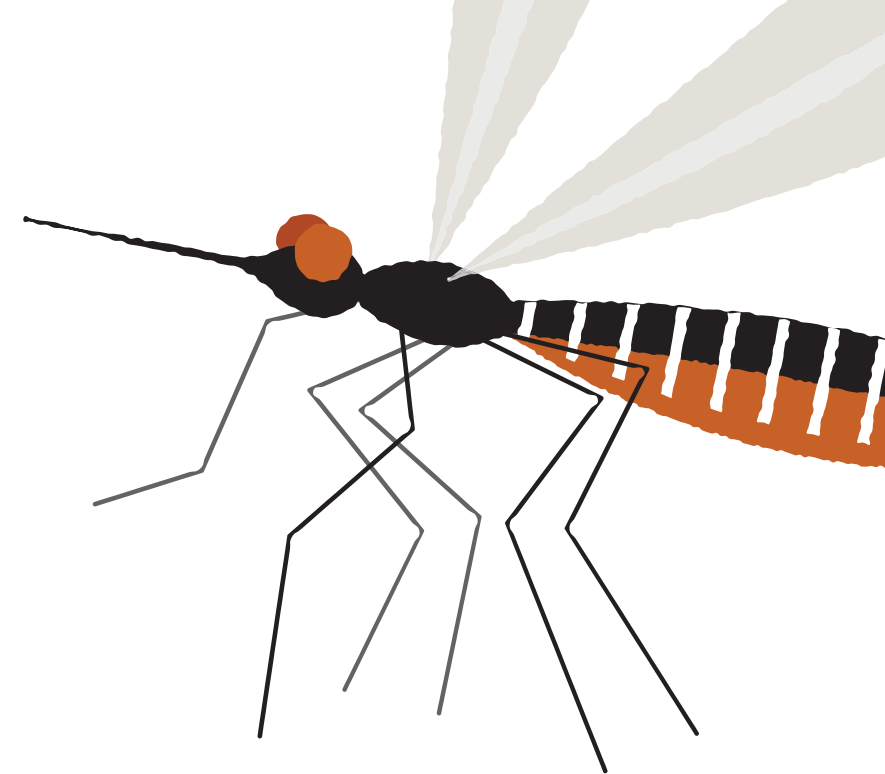
With video, audio and Global Positioning System (GPS) technology running, they collected data on mosquito-borne diseases by simply chatting about what they observed as they walked through the neighborhoods, recording what they saw: waterlogged garbage here, an open canal there. Baby mosquitoes go through a tadpole-like aquatic stage before they are old enough to fly, so the more standing water, the more likely disease-carrying mosquitoes call the area home.

But that's not all Krystosik and her colleagues were looking for. Other data points worth collecting were signs of high rates of homelessness and poverty. After all, a person with limited access to shelter and clothing is at a higher risk of being bitten than someone who can easily afford bug repellent and window screens. By strolling the streets of Cali, Krystosik was collecting a richer picture of the area's mosquito borne-disease problems (chikungunya, dengue and Zika) than she got from charts of numbers.

The information she gathered as part of her doctoral research helped mobilize local resources to improve control of outbreaks



Of the world's approximately 3,500 mosquito species, only a handful actually spread disease to humans.



in the field, create local risk maps and uncover trends that will be useful for future infectious disease control programs.

The Danger of Mosquitoes

Mosquito-borne diseases are deadly enough that Bill Gates, whose foundation fights malaria and more, calculated that the tiny insect kills more people each year—750,000 annually—than any other animal. (Humans come in second place, followed distantly by snakes, dogs, and another disease-carrying insect, the tsetse fly.)

Without mosquitoes, there would be no mosquito-borne diseases. But of the world's approximately 3,500 mosquito species, only a handful actually spread disease to humans. And eliminating mosquitoes worldwide isn't a realistic solution.

"We tried to eliminate malaria [that way] and failed," says Madhav Bhatta, PhD, an associate professor in the College of Public Health, who also serves as a consultant epidemiologist in public health emergency preparedness for Tuscarawas county. The cornerstone of that effort was widespread use of DDT, which killed mosquitoes—but also other insects.

Even modern insecticides can have unfortunate results. When Dorchester County in South Carolina used an airplane to spray for mosquitoes in July 2016, farmers found piles of dead bees in their fields. "There will always be unintended consequences of any chemically based control measures," says Bhatta.

Spraying pesticides is still one prong of public health efforts against mosquito-borne disease, but it is usually targeted to specific areas with mosquito breeding sites. Another important

way to prevent these diseases is convincing people to avoid contact with mosquitoes, which includes spraying themselves with insect repellents and using barriers like long-sleeved clothing, bed nets and window screens.

Worldwide, malaria is the biggest mosquito-borne threat: it's responsible for the deaths of more than 600,000 people every year. Malaria travels in the tiny bodies of *Anopheles* mosquitoes that live in tropical areas around the globe. Meanwhile, the *Culex* mosquitoes that are common throughout the United States are less dangerous, but not entirely blame free: they can carry West Nile virus and St. Louis encephalitis.

Lately, though, the most newsworthy mosquito is *Aedes aegypti*, which transmits some serious diseases in tropical parts of the world. Dengue, chikungunya, and yellow fever have long been its specialties. And recently, this multitasking mosquito has been making headlines over a formerly obscure part of its repertoire: Zika virus, the one that causes babies to be born with neurological problems and small heads.

A New Threat

Zika is not a new disease, but it was only in 2015 that Brazilian doctors and public health officials suspected it was correlated with a sudden surge in cases of microcephaly. Babies born to Zika-infected mothers often had smaller than usual heads. Many of those infants turned out to have other problems as well. Impaired vision and hearing, developmental delays such as trouble walking and seizures are among the symptoms that babies born with Zika may face as they mature.

Aside from those birth defects, Zika hasn't shown itself to be a particularly dangerous disease. Some 80 percent of people who are infected never show it. In those who

do, a case might be no worse than a rash and some flu-like symptoms. Avoiding Zika-carrying mosquitoes is crucial for pregnant women and their partners (since it can also spread sexually), but other people have little to fear.

Fear takes over, though, in many people's minds. In a 2016 survey by the Annenberg Public Policy Center, 42 percent of Americans said that a person infected with Zika is "very likely" or "somewhat likely" to die. That's just not true.

Don't Panic

Tara Smith, PhD, associate professor of epidemiology in the College of Public Health, was one of just a few people who recognized the name Zika when the outbreak started making headlines in early 2016. "At that point, there were few people for reporters to talk to," she says. Smith noticed people asking questions about the virus, sometimes assuming the worst. So she penned a few articles—one for *Mental Floss*, another for *Quartz* and several more since—calmly laying out the facts.

Smith relayed how the disease is and is not transmitted, and she explained that the Centers for Disease Control and Prevention (CDC) advises pregnant women not to travel to countries where Zika is spreading. She gave a reality check on the chances that Zika could come northward to the United States—possible, but unlikely to spread widely.

Communicating well about diseases like Zika is tricky. The CDC wants you to fear Zika just enough that you cancel your travel plans to Zika zones if you are pregnant, and that pregnant women and their partners use effective mosquito repellents if they can't avoid one of those areas.

Since the Zika virus remains viable in both male and female body fluids for at least several weeks, the CDC currently recommends that people who have been to an area with Zika, even if they show no symptoms, take precautions with sexual partners for up to six months after their return. (See www.cdc.gov/zika/ for updates.)

When fear takes over, however, rumors may fly that a disease is deadly when it is not, or that it is a fiction created as part of a government cover-up. Those are some of the theories Smith found herself having to debunk online.

The bottom line, says Smith: Don't panic. "We saw it with Ebola, we saw it with Zika, that people listen to the news and they get scared." In early 2016, the World Health Organization declared the South American Zika outbreak an international public health emergency. That sounded scary, but it didn't mean that the disease is a threat to everyone in the world. Instead, the designation spurred countries to divert money to prevention and treatment efforts.

The truth is, for someone in a place like Ohio, Zika is unlikely to be an immediate threat. While the virus can spread in warm climates where the mosquito already lives, like Florida and Texas, even those areas are not likely to see the kind of spread or the frequency of birth defects as the South American countries where the outbreak hit first.

"We have good health care systems here," Smith says. "We have good prevention systems here." Far fewer buildings lack window screens, for one thing. We also don't have dense populations of mosquitoes living in the same place as dense populations of people, like those Krystosik saw in Colombia.

But that doesn't mean Ohio is off the hook. Christopher Wolverton, PhD, professor of biostatistics, environmental health sciences and epidemiology in the College of Public Health and former Kent City Board of Health president, has watched the state's approach to mosquito-borne disease shift over the years. West Nile virus was new and scary in the early 2000s, and public health researchers began catching mosquitoes in traps (small boxes placed near areas of standing water) and testing them for the virus.

When concern about West Nile died down, federal and state governments stopped funding this surveillance. (Some municipalities, including Kent, found the funding to keep doing it.) "But now that Zika is in the spotlight, the trapping and testing are making a comeback," says Wolverton. "However, we still teach and practice prevention over paranoia."

Ohio lies at the edge of *Aedes* mosquito range. The mosquito spreading Zika in South America is a species called *Aedes aegypti*, and its relative *Aedes albopictus* has been spotted in southern Ohio. With traps all over the state,

In a 2016 survey, 42 percent of Americans said that a person infected with Zika is "very likely" or "somewhat likely" to die. That's just not true.

public health officials can tell when, where and if the mosquito begins to spread. This system, developed for West Nile, is ready to keep an eye out for Zika-carrying mosquitoes, too.

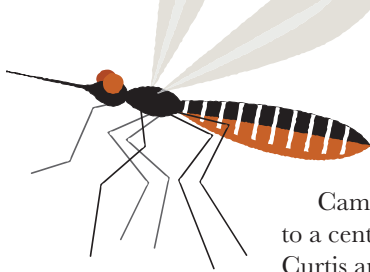
Building on the Past

Zika is brand new as a public health concern. But since it is a close relative of several other viruses that scientists and doctors know all too well, past efforts to thwart those other diseases can be quickly turned to monitoring and addressing the new one.

Vaccines for Zika's relative, dengue fever, for example, have been under development since the 1940s, and the first one was only just licensed in 2015. But scientists were able to develop an experimental vaccine for Zika in record time, coming up with a vaccine to test in just a few short months, which recent news reports say could be available as early as 2018. Blood tests for Zika also built on previous work: its genetic material is similar to that of dengue and other relatives.

The camera/GPS technology that Krystosik used to map Zika hazards in Cali, Colombia, was already in place, as well. She had originally planned to work on a different project with the Causaseco research institute there, testing whether insecticide-laced sugar could kill enough mosquitoes to be effective against malaria. But when she couldn't travel safely to the malaria-stricken areas and needed an alternate plan, she remembered that she had heard Andrew Curtis speak about a new way of mapping out the risks of a neighborhood.

Andrew Curtis, PhD—who came to Kent State in 2012 and is a professor of geography and the current co-director of the GIS, Health & Hazards Lab—was an assistant professor at Louisiana State University when Hurricane Katrina hit in 2005. Part of a team that supported operations in the state's Emergency Operation Center during the response to Katrina, Curtis came up with a spatial video system to survey the damage on a hyper-local level. ▶



Cameras fastened to an SUV were connected to a central global positioning system, and Curtis and his students went street by street, video mapping the neighborhoods hit hardest by Katrina. Members of the community rode along to talk about what had been there and what was lost. The team created maps and gave them back to the neighborhoods to help with planning and grant applications, Curtis says. Teams have returned to New Orleans over the years to document the remaining devastation and the rebuilding process.

Since then, this walk-and-talk approach has allowed researchers to collect data on gang violence and homelessness in American cities, cholera risks in Haiti and more.

“We map challenging spaces,” says Curtis, whose projects target places where official data is lacking and where societal problems like poverty are layered with health issues. In one project, a student from his team at Kent State carried a video camera in a rowboat to get a better view of a slum on a lake in Bangladesh.

There’s just no substitute for seeing the neighborhoods for yourself. A group of Kent State public health students also learned the value of firsthand observation when their annual trip brought them to Brazil in the midst of the recent Zika epidemic in spring 2016.

Mark James, PhD, professor and chair of the Department of Biostatistics, Environmental Health Sciences and Epidemiology and executive director of Global Health Programs for the College of Public Health, leads public health students on a trip every year to visit partner institutions in different parts of the world. The 2016 trip went to the Oswaldo Cruz Institute in Rio de Janeiro. At first, their experience included lectures at the institute on everything from

leprosy to Zika to cardiovascular diseases. Shortly afterward, in Manaus, the students followed community health workers making their rounds on motor scooters.

A family had hung a red flag outside their house, the signal that somebody inside was suffering from a fever. The health workers stopped there and took blood from three people to examine for malaria parasites.


The students also saw mosquito habitats up close, from forgotten old tires to community ponds that were popular among residents as areas to bathe in and have fun. “You can read about things in a textbook or hear people talking about it in lectures,” James says, “but nothing compares to seeing it in real life.”

Keeping Mosquito-Borne Disease in Check

The College of Public Health’s Brazil study abroad course took place in May, as the southern hemisphere’s summer was ending. Zika cases were already declining, and the students didn’t see many mosquitoes. But they definitely came prepared.

James and the students went over the CDC-recommended prevention guidelines—wear long sleeves and pants, use DEET-containing repellents and stick to air-conditioned indoor places as much as possible—and the excursion went without a hitch, James says. “Everybody was diligent about putting on their insect repellent.”

Those are the same recommendations the CDC gives to pregnant women, although they obviously have more at stake. DEET, the main ingredient in highly effective repellents, is safe to apply in pregnancy. If you’re only afraid of a few itchy bites on a camping trip, you might



get lazy with the repellent. But when your baby could suffer birth defects, or if you are at risk for a dangerous mosquito-borne disease like malaria, even a single bite can be disastrous. Less effective means of avoiding bites, like the citronella candles so many of us bring out at summertime barbecues, don’t cut it when your health is at stake (see box on page 14).

The Next Pandemic

The public health emergency around Zika was declared to be over in November 2016. The virus is still out there, but public health officials are now treating it as a simmering presence, not a sudden explosive threat. And scientists are keeping an eye out for the next disease to catch the world by surprise.

“We are going to keep seeing these pandemics, keep seeing these epidemics,” says Smith, because so many viruses and other pathogens are already out there, under our radar. Many, like Ebola, infected animals before making a jump to humans. And even Zika kept to itself for decades after its discovery, quietly infecting people in a few Pacific island nations before suddenly causing a rash of Brazilian microcephaly cases.

“What are the pressures that cause [diseases] to suddenly erupt after being fairly silent for the maybe 50 years that we’ve known about them?” Smith asks. “I don’t think we know, and that limits our ability to predict what is next.”

One exciting possibility, Woolverton notes, is an effort by several international teams to create a vaccine for an entire broad family of viruses that haven’t yet become a problem. Then, if any virus in that family sparks an outbreak, scientists could quickly tweak the vaccine and be ready to go. “It sounds a little sci-fi-ish, but the science is sound,” he says.

Such a plan would need massive amounts of funding, so it may never happen. But experts at Kent State and beyond are convinced that new pandemics are on the horizon. Growing mosquito populations, thanks to climate change, mean another mosquito-borne disease may well be the next threat. ⚡

Beth Skwarecki is a health and science writer based in Pittsburgh, Pennsylvania. Her book, *Outbreak!: 50 Tales of Epidemics that Terrorized the World* (Adams Media) was published in October 2016.


Why Mosquitoes Love You So Much

Mosquitoes have their favorite foods, just like people do. Males sip nectar from plants, and sometimes females do, too—but when a female is getting ready to lay eggs, she needs the extra protein that comes from dining on blood.

That blood can come from humans, but many of the world’s 3,500 mosquito species drink animals’ blood instead of or in addition to humans’ blood. For example, some *Culex* species have a taste for birds, but will feed on humans if they are trapped indoors.

Some people attract mosquitoes more than others, so a mosquito that happens upon your backyard barbecue might prefer you to your friends. Here are some factors that may make you a tastier treat:

YOUR BLOOD TYPE A 2004 study published in the *Journal of Medical Entomology* put mosquitoes into a box in which two people with different blood types had inserted their arms. Faced with a choice between



type O and type A people, *Aedes albopictus* mosquitoes landed twice as often on people with type O blood. The mosquitoes seemed to be able to smell the sugar chains that define our blood type. They seemed to like type B blood a little more than type A, but not as much as type O.

YOUR BREATH Before a mosquito gets close enough to decide whom to bite, it has to find where the people (or animals) are in the first place. So when a mosquito is flying around your backyard, it’s sniffing around for carbon dioxide—the stuff you exhale. The bigger you are, the more carbon dioxide you produce. If you’re exercising and breathing hard, you’ll produce even more. And a 2000 study in *The Lancet* found that pregnant women attracted twice as many mosquitoes as their nonpregnant counterparts—they exhaled more carbon dioxide and had higher body temperatures, so mosquitoes could detect them more easily.

THE BACTERIA THAT LIVE ON YOUR SKIN We all have a coating of friendly bacteria on our bodies. In a 2011 study published in *PLOS ONE*, scientists compared the bacteria on people mosquitoes seemed to love, versus those less attractive to the insects. The researchers speculate that some of the less-attractive people have bacteria that break down chemical signals before mosquitoes can smell them.

WHETHER YOU’VE BEEN DRINKING OR NOT

Mosquitoes seem to prefer the smell of people who have been drinking alcohol. In a 2010 study published in *PLOS ONE*, *Anopheles gambiae* mosquitoes, which carry malaria in Africa, were most attracted to people who had consumed a beer. The same people before drinking beer, or a different group who only drank water, were less interesting to the mosquitoes. —B.S.

DID YOU KNOW?

- **Choose an effective repellent** with at least one of these active ingredients: Picaridin (20%), IR3535 (20%), DEET (20-30%), Oil of Lemon Eucalyptus or PMD (30-40%); it will protect against *Aedes* mosquitoes for at least four hours.
- **Avoid blends of essential oils;** some may work for a short time, but others are ineffective against *Aedes* mosquitoes.
- **Spray your feet and ankles;** the *Aedes* mosquito is particularly attracted to feet.

- **Apply sunscreen (if needed) before repellent** so the SPF doesn’t mask the repellent; reapply both after swimming and sweating.
- **Don’t use repellents on infants under six months** (cover strollers and baby carriers with fine netting instead), avoid using Oil of Lemon Eucalyptus or PMD on kids under three and never use more than 30 percent DEET on anyone.
- **Wash your hands after applying repellent;** wash clothing and repellent-coated skin at the end of the day.

Source: Environmental Working Group

ksu COLLECTIONS

Reinberger Children’s Library Center

Room 314, University Library

When you think of children’s picture books, you probably don’t think about scholarly research. But scholars come from all over the world to study the colorful collections and resources of the Reinberger Children’s Library Center (RCLC) at Kent State’s School of Library and Information Science.

Opportunities abound for research into countless subjects in children’s and youth literature. Recent scholars have explored such varied topics as contemporary art, linguistic diversity, homelessness and social justice.

Since its opening in 2003, after receiving a gift from the Reinberger Foundation of Cleveland, the center has been a popular gathering space for conferences, workshops, meetings and classes. Originally called the Reinberger Children’s Room, it was conceived as a “demonstration” children’s public and school library center to train students and practitioners.

Not to be overlooked, however, according to the center’s director, Michelle Baldini, MLIS, is the significant acquisition of rich and diverse materials in children’s literature that has made the Reinberger a meaningful research facility.

In 2008, it expanded to house collections donated by the late Dr. Kenneth and Sylvia Marantz. The Marantz Picturebook Art has grown to include more than 30,000 picture books from the past 40+ years, as well as posters, original artwork, ephemera and character toys.

Today, the Reinberger boasts a non-circulating collection of more than 50,000 picture books, original picture book art, publisher posters from 1924 on, historical children’s books, movable, pop-up and toy books—and more. (See samples at right.)

To encourage scholars to explore these rich collections, the school offers two annual research fellowships of up to \$1,500 each.

The vision of the center, Baldini says, is “to be a portal of information and inspiration relating to the world of children through the study of children’s literature and youth services librarianship.”

Learn more at www.kent.edu/slis/reinberger-childrens-library-center. To pursue scholarly research using the center’s collections or to schedule a tour, contact Michelle Baldini at mbaldini@kent.edu, 330-672-0017.



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1. 19th-Century Collection

Pris and JDub’s Historical Children’s Book Nook contains 19th-century historically significant children’s books.

2. Pop-Up Book, 2010

Paper Blossoms: A Book of Beautiful Bouquets for the Table by paper engineer Ray Marshall is one of more than 600 pop-up and movable books in the Carol G. Davis Pop-Up Collection.

3. Punch and Judy Puppets, circa 1876

Donated by Priscilla Drach, these are the oldest puppets in the Reinberger’s large puppet collection.

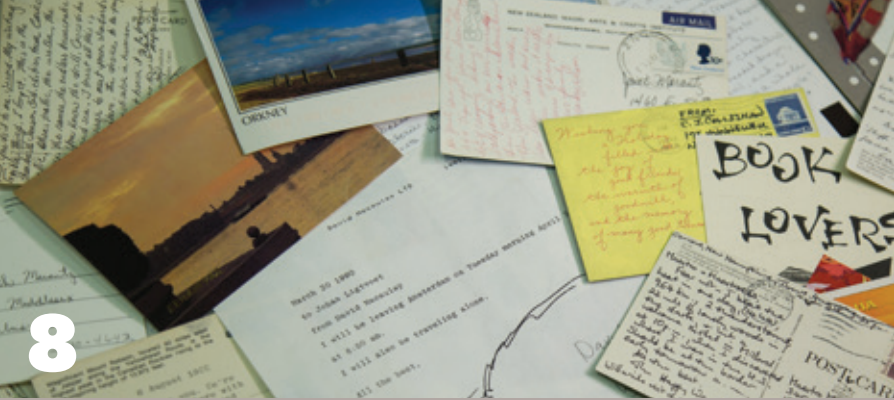
4. Artist Donation, 2013

Yuyi Morales, illustrator and author of many award-winning children’s books, spoke at Kent State’s annual Virginia Hamilton Conference on Multicultural Literature for Children in 2013; she drew this sketch of a deer at the event.

5. Original Artwork, 1998

This cover illustration for *The Horn Book Magazine*, by Caldecott-award-winning author and illustrator Chris Raschka, is part of the Wolfenbarger Collection of Original Picturebook Art.

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6. Pop-Up and Movable Book, 2011

Encyclopedia Mythologica: Dragons and Monsters, by renowned paper engineers Matthew Reinhart and Robert Sabuda, is a popular book in the pop-up and movable collection. Sabuda gave the keynote address at Kent State’s symposium on children’s movable books in 2014.

7. Beatrix Potter Books and Figurines

The Margaret Alexander Beatrix Potter Collection contains all first editions and even pirated books by Beatrix Potter, along with collectible figurines.

8. Marantz Correspondence

Dr. Kenneth Marantz (a professor of art at Ohio State University) and his wife, Sylvia (a librarian), reviewed thousands of “picturebooks” (his preferred spelling), which they donated along with letters and cards from publishers, editors, authors and illustrators.

9. Process Book

Best-selling children’s author and illustrator Rosemary Wells gave the keynote at Kent State’s 2015 symposium on early childhood literacy. She donated manuscripts, original art and dummies from her 2014 book *Stella’s Starliner*. Pictured: the dummy she submitted to the publisher (above) and the finished book (below)

Fostering **HOPE**

By Keri Richmond '17



MELISSA OLSON

Picture a four-year-old girl. Short pixie haircut, crooked on one side because she cut it herself. She's a ball of energy, loud and laughs with her belly. She hates naps and always fights her bedtime. And before she falls asleep every night she wishes for a family.

She is a foster child. In this photo, she is at one of her foster homes. She has been in and out of the foster care system since she was born—little stability and little consistency.

This is me.

still remember that foster home.

Mostly, I remember the Sesame Street stuffed animals that brought me a bit of comfort as I cuddled them every night. I remember crying when I was sent to a new foster home—not because I was leaving, but because my foster mom wouldn't let me take the stuffed animals with me. I'm not the only one to experience this . . . it's a small peek inside the life of a foster child.

In 2015, 427,910 kids in America were in foster care. That's enough to fill the Horseshoe Stadium at Ohio State University four times over. And do you know what most of these kids put their belongings in when they are being taken from their family and brought to a foster home? A trash bag.

What kind of message does that send them? What do you put in a trash bag? Spoiled food, disgusting

garbage, things you don't need or want anymore. And once it's tied up, you don't want to open it again. But at this scary and uncertain time in a child's life, we throw their things in a trash bag and send them to some new home. We can do better than that.

Flash forward to when I was a senior in high school, leaving my adoptive family's home when things had not worked out. I found myself again moving to a new home—nearly 14 years later and still using trash bags.

I had no clue where my life was going or what I was going to do next. But my best friend and her family opened their home to me. And then her parents did something that changed the course of my life. They cosigned a loan that made it possible for me to come to college. These incredible people believed in me, and with that signature they gave me a shot at a better life.

Since then, I have wanted to do whatever small part I could to give foster children some hope that things will get better. When I got to college, I started interning with an amazing nonprofit called Together We Rise. Their mission is to change the way foster kids experience the foster care system.

During my internship, each intern was asked to raise \$500 to replace trash bags with 25 duffel bags for foster kids—duffel bags known as "Sweet Cases." It seems like a small thing, but small things make a huge difference. Foster kids aren't trash, and they should be able to move from one house to the next with a little bit of dignity.

So I gave fundraising a go. I could have just explained the facts, like one duffel bag is \$25 and that's about five cups of coffee. But I figured the best way to ask people for their money is to tell them why it's so important to me and why it should matter to them, too. I stood in front of my sorority, and for the first time in college I just laid it out on the table. And because I told my personal story, it made it personal for them, too.

In the end, I was overwhelmed by support. People donated over \$4,000, and more than 150 kids put those trash bags where they belong—in a garbage can. They got to trade them in for some sweet duffel bags with a stuffed animal and blanket that they could take with them from one foster home to the next.

After that internship, I started letting go of the mentality that I was a victim of the system and started realizing I was a fighter. It set me free to react differently.

Being a fighter meant fighting for foster kids to have a better experience. When we can create something positive from our own negative experiences and help others, it's healing, restorative and empowering.

This idea played out in a larger role when I was accepted to the Foster Youth Internship program in Washington, D.C., an internship designed for foster youth to embrace their past in order to empower current and future foster youth.

I spent 10 weeks working for a Senator on Capitol Hill, learning about policy while researching and writing policy recommendations based on my experiences in the foster care system. My fellow foster youth interns and I had to rewind to some painful memories in foster care, think about what could have made a difference for us and then recommend some policy changes that would make the foster care system better for the future.

We were empowered and on fire to make a difference, to be a voice for the kid that was still buried deep inside us, to be a voice for this vulnerable population and show them that we are not just a product of the foster care system. We have the power to rethink our worst experience and react in a new way. And so do you.

Our most painful experiences and stories can be the driving force for the most positive change.

After 10 weeks working with the Senator and the Congressional Coalition on Adoption Institute, eleven of my peers and I sat in two different briefings in the United States Capitol Building and the White House. We told our stories to members of Congress and to the Domestic Policy Council, and we made policy suggestions. Not every recommendation was implemented, but since the Foster Youth Internship program started in 2003, numerous

pieces of legislation have been passed based on the personal stories of foster youth who were fearless and brave and used their story to demand change.

A lot of the time we are ashamed of some of our past experiences or where we came from. We'd rather not bring it to light. But one of my favorite quotes is, "You were assigned this mountain to show others it can be moved."

That little four-year-old girl in the photo could have been another number on the long list of statistics because of where she got her start in life. But I'm here today—thankfully with no crooked pixie haircut—still loud and still ornery and now fighting for other kids to have the family and the love they so rightfully deserve.

People tell me I'm "so strong" and that they would never imagine I had been in foster care. But my peers and I are strong, resilient and bold *because* we were in the foster care system. And for that I am proud.

Recently, I met a stranger and we started talking—and I told her a little bit about my past. She told me, "You are not meant to carry the burdens from your past, you are meant to carry hope."

"Carry hope." You know what my birth mother named me? Keri Hope.

So the next time you tie up a trash bag and carry it to your trash bin, I hope you'll take a minute to think about a foster child who might be carrying a trash bag, too—but under wildly different circumstances.

Regardless of what you have been through, your worst experience could inspire the most positive change. One small act can make a big difference in somebody else's life. I know it has in mine. ✨

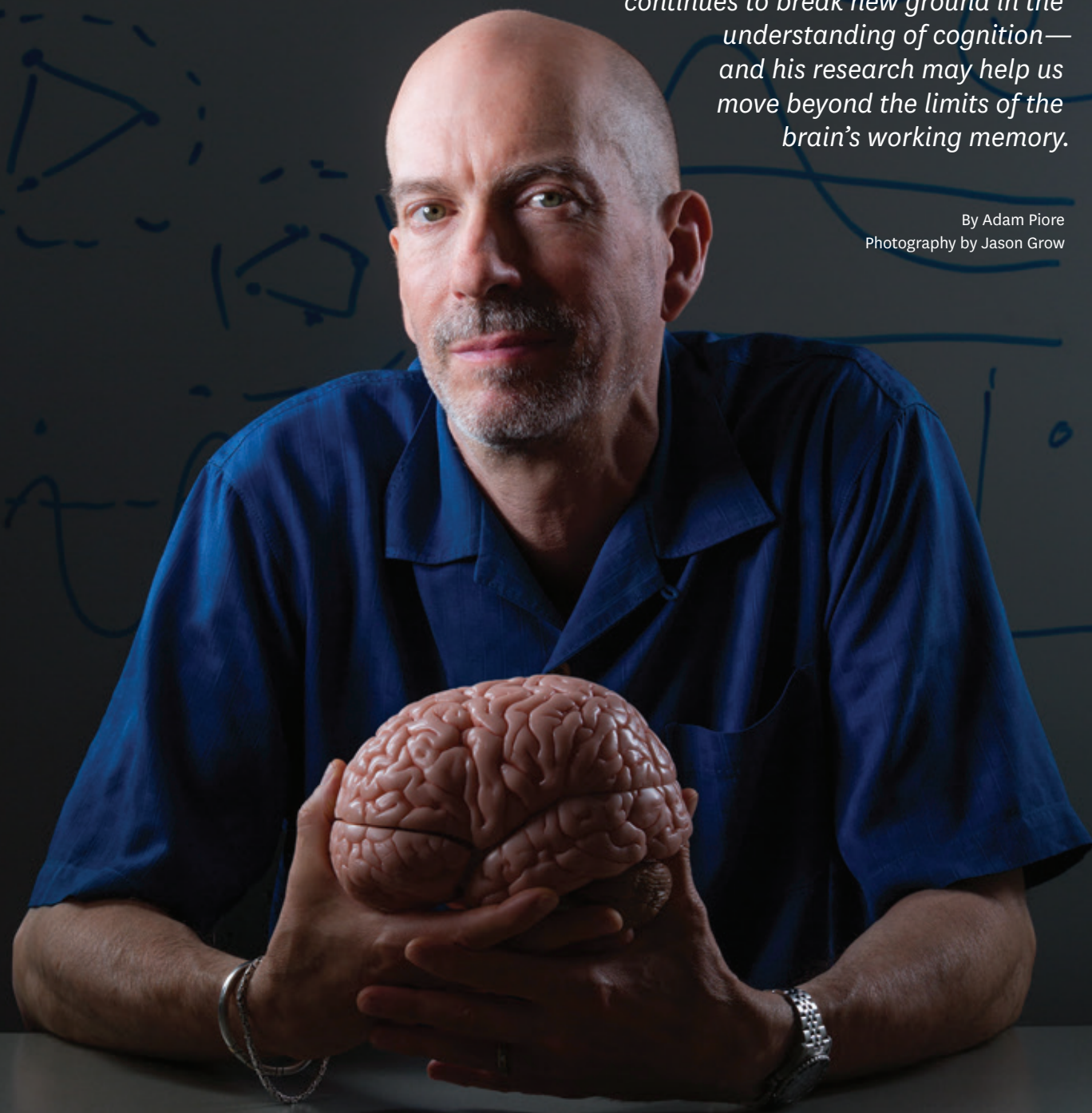


Keri Richmond is a senior public relations major in the School of Journalism and Mass Communication at Kent State. She recently was recognized as one of FosterClub's Outstanding Young Leaders for 2017. Adapted from her TEDxKent State talk, February 18, 2017. View a video of her talk at www.kent.edu/magazine/KeriRichmond, and learn more at www.KeriHopeRichmond.com.

ATTENTION, PLEASE

MIT neuroscientist Earl Miller, BA '85, continues to break new ground in the understanding of cognition—and his research may help us move beyond the limits of the brain's working memory.

By Adam Piore
Photography by Jason Grow



In the rehearsal space of the Boston band What She Said, Earl Miller lays into his bass guitar, plucking out a funky groove. In a black band tee, faded cargo pants and signature newsboy cap, Miller looks like a seasoned musician you'd see in any corner dive bar.

But at his nearby office at MIT, Miller is nothing if not professorial. How could that rocker in the cap be the same bookish academic now gazing solemnly at me across his paper-strewn desk at the Picower Institute for Learning and Memory? The jarring contrast between the two Earl Millers is a fitting way to begin a discussion of the pioneering neuroscientist's work.

After all, some of Miller's biggest contributions to the field over the past 20 years have explored exactly how contrasts like these are possible; how it is, in other words, that human beings—or any other animal with a brain—are able to seamlessly adapt behavior to changing rules and environments. How is it that distinct populations of brain cells, or neurons, are able to work together to quickly summon an appropriate response? How do we know when it's fitting to play a Patti Smith bass line, and when it's time to explain the complex workings of brain waves?

This mental flexibility is so fundamental that it's easy to take it for granted. But there are few functions the brain must perform that are more complex or crucial to survival than recognizing when something has changed and then calling up all the disparate information needed to adapt appropriately.

"Think about what we're doing here," Miller says. "Right now. We're sitting on chairs. We're taking turns talking. This is based on rules. We've learned how to behave in this context we're in right now."

To pull off tasks like these, the brain uses something called *working memory*. Cognitive psychologists coined the term in 1960 as they tried to explain the fundamental structure of the human thought process.

Try to hold that last sentence in your mind, or memorize a phone number you're about to dial, and you'll have engaged this critical brain system.

Miller has spent the past two decades trying to understand the mechanisms behind working memory, and he believes the key lies in the brain's prefrontal cortex. Insights into this thin layer of neurons at the

front of the brain could answer questions that have flummoxed scientists for generations. It might have practical use, too.

Experts have long known that we have a virtually unlimited capacity to store new long-term memories. Yet there's a limit on how much information we can cram into our working memory.

In studying the prefrontal cortex's functions, Miller and others are coming closer to finally explaining this contradiction. And by solving this riddle, we may find ways to get beyond those limits.

Someday, Miller believes, he'll be able to make us all smarter.

Building the Picture

As postdoctoral students at Baltimore's Johns Hopkins University in the 1960s, David Hubel and Torsten Wiesel set out to solve a long-standing mystery: What happens in the brain when we see objects and shapes?

Every one of us has about 100 billion neurons, separated by gaps called synapses. Neurons talk to each other by passing signals across these spaces. When one neuron's signal is strong enough, it causes the neuron on the other side of the synapse to fire an electrical spike. When that second neuron fires, it passes messages to all the other neurons it's connected to, which can cause those neurons to fire. This sequential firing of neurons allows us to think, to move—and to see.

After a series of experiments performed on the visual cortex of animals, Hubel and Wiesel argued that it is the consecutive firing of individual, specialized neurons, each responsible for a specific detail in a picture or pattern, that helps us build complex images in our mind's eye. Their work earned them the Nobel Prize in Physiology or Medicine in 1981.

As it happened, Miller entered Kent State University the same year—with dreams of becoming a doctor. That quickly changed when he started working in a neuroscience lab. ►

**Someday,
Miller believes,
he'll be able
to make us all
smarter.**

It was as if the brain was on automatic pilot, primed to notice repetition without any active effort to do so, even when that repetition had no meaning.

“The moment I first dropped an electrode into a slice of brain and heard all these neurons firing away like a thunderstorm, I was hooked,” Miller recalls.

As a Princeton University graduate student, Miller studied the inferior temporal cortex, a patch of neurons slightly forward of the visual cortex. Scientists had demonstrated this was the region that knits together a unified image from all the complex individual components Hubel and Wiesel identified. Then it starts the “higher level” processing of the outside world.

By the time Miller earned his PhD in 1990, he was asking the questions that would later define his career: What happens in the inferior temporal cortex after a unified picture emerges? How do our brains tell us what it means?

Miller tried to answer those questions while working in the lab of National Institute of Mental Health neuroscientist Bob Desimone. Miller was

looking for neurons that fired only when an animal spotted an item it was storing in short-term memory. Miller and Desimone trained animals to hold a single image in mind—such as an apple—and release a lever when that picture reappeared on a screen.

If the animal remembered the first picture it saw and released the lever, a drop of delicious juice would roll down a tube and into its cage.

The pair noticed that certain parts of the animal brain were inherently sensitive to repetition—regardless of whether it translated into a valued juice reward. Some neurons fired when animals saw a second banana or second image of trees. It was as if the brain was on automatic pilot, primed to notice repetition without any active effort to do so, even when that repetition had no meaning.

But the pair also discovered a second type of firing pattern. When the animal spotted a picture it was actively holding in his memory—hoping for a juice reward—not only did different neurons fire, those neurons fired far more intensely.

“Something was switching the volume to make these neurons fire, more or less, depending on the nature of the memory,” Miller says. “That got me wondering. Who’s turning up or down the volume?”

Turn It Up

Scientists have suspected that the prefrontal cortex plays a key role in high-level cognition since the case of Phineas Gage. On Sept. 13, 1848, Gage, who worked in railroad construction, was setting an explosive charge with a tamping iron when the gunpowder detonated, rocketing a metal rod up through the roof of his mouth, into his left frontal lobe and through the top of his skull. The rod landed 75 feet away, coated in pieces of Gage’s brain.

Miraculously, Gage survived and could speak, walk and function. But, it was written later, he could no longer stick to plans and lost much of his social grace and restraint.

From studying Gage and others like him, neuroscientists surmised that the frontal lobes performed the brain’s “executive functions.” They run the business of thinking and processing and directing the spotlight of attention. And yet, nearly 150 years after Gage’s famous injury, scientists were still trying to understand how the frontal lobe works.

So, when Miller started his own lab at MIT in 1995, he decided to switch his focus to the prefrontal cortex. By then, some of his peers had already shown that clusters of neurons in lab animals would fire repeatedly in the prefrontal cortex during memory exercises. Their results suggested this region houses our working memory.

To Miller, however, this didn’t explain how the executive areas of the brain could “turn up the volume” on memories associated with free juice.

How does the animal know how to do the task? How does the animal know the rules?

“I thought that was the most important thing,” Miller says. “I didn’t understand why no one was studying it. Context-dependent behavior is what high-level cognition is all about.”

In his new lab, Miller designed an experiment that complicated the choice his animals faced. Instead of just showing an animal a picture and training it to respond every time it reappeared, he varied the number of possible responses by adding a second cue.

Miller predicted he’d detect activity in multiple neurons in the prefrontal cortex every time he changed the rule. These neurons, he believed, somehow turned up or down the “volume” of the neurons he’d recorded in other areas of the brain.

Not only was Miller right, but the rule change consistently caused twice as many neurons in the prefrontal cortex to fire than in the more simplistic experiments where the task required the animal to just hold a picture in mind.

“That told us something,” he says. Perhaps the prefrontal cortex’s primary job wasn’t short-term memory at all, but to learn the rules of the game.

In 2001, Miller published a research review that fundamentally shifted the way many viewed the prefrontal cortex. Miller compared the prefrontal



Earl Miller plays bass at the Tavern at the End of the World in Boston’s Charlestown neighborhood.

cortex to a railroad switch operator, and the rest of the brain to railroad tracks. The switch operator activates some parts of the track and takes others offline. This model would explain how attention works. It explains, for instance, how an animal can focus on a picture while suppressing a noise. And it explained why Phineas Gage had trouble blocking out distractions and focusing on the task at hand.

The theory made intuitive sense. But to some, steeped in the specialized-neuron theories of Hubel and Wiesel, Miller’s theory seemed preposterous.

“That’s impossible!” Miller recalls one prominent neuroscientist declaring after Miller delivered an invited lecture. “We all know that neurons do one thing. Your problem is you can’t figure out what these neurons are doing,” the researcher told him.

But Miller has continued to accumulate experimental evidence—as have many other labs—gradually winning scientists over to his idea.

“Neurons are multifunctional,” Miller says. “We’ve shown this over and over again for 20 years.”

Wave Change

These days, Miller is taking on another piece of dogma—that neurons primarily communicate by electrical spikes. In recent papers, Miller argues that there’s still a lot to learn from the intermittent electrical currents called oscillations, or brain waves.

When we hold an item in working memory, these oscillations move through brain circuits in waves

that rise and fall scores of times. These oscillations, he argues, are how the prefrontal cortex—that mental “switch operator”—stores several items on the cusp of our awareness in working memory, so we can pull them into our conscious minds as needed.

The oscillations aren’t enough to make the neurons spike. But the brain waves bind together all the neurons in a circuit with every crest, pushing the neurons so close to their firing point that they’re primed to respond to just the slightest extra stimulus.

This might help answer a question that has long intrigued scientists: How can the human brain store a virtually unlimited number of long-term memories, yet remain severely limited in the information we can hold in our conscious minds at once?

It’s a limit most notably characterized by Princeton cognitive psychologist George Miller (no relation) in a 1956 paper, “The Magical Number Seven, Plus or Minus Two.” George Miller, who helped coin the term *working memory*, argued that seven, plus or minus two, is the maximum number of objects most of us can hold in our short-term memory at once. Researchers have since demonstrated the number can vary far more widely and may even be smaller than seven. But no one doubts there are limits. (See sidebar on page 24.) ►

“Earl is kind of a rock star. When he says something, a lot more people notice it.”

(Continued from page 23)

If working memory is encoded in oscillations, Earl Miller says it would explain these limits, because a single wave can only rise and fall a certain number of times a second. “That means you have to fit in everything you want to juggle in your current conscious mind,” he says. “That’s a natural limitation in bandwidth.”

Brad Postle, a University of Wisconsin-Madison neuroscientist, says the idea that something other than the spiking of neurons is important has been “kicking around for a while.” Postle himself suggested brain waves may play a role in focusing attention. Still, he believes it’s significant that Miller is now arguing the point.

“Having it come out of Earl Miller’s mouth almost by definition will bring attention to it,” says Postle, who authored a widely used neuroscience textbook that includes many of Miller’s earlier experiments. “Earl is kind of a rock star. When he says something, a lot more people notice it.”

Now, Miller is focusing on new technologies that might actually enhance working memory capacity.

“If we find a way to stretch the cycle, increase amplitude, make it taller or maybe slow the frequency a little bit, maybe we could increase the capacity of working memory,” he says.

So he’s planning on experimenting with a technique that uses electrodes placed on top of the scalp to deliver faint pulses of electricity and record the impact. If these pulses are timed correctly, they could change the shape of the brain waves.

It would be a significant technological feat, but Miller thinks it’ll work. If he’s correct, it could have a profound impact on human performance, literally expanding our brainpower. ⚡

Adam Piore is a writer based in Boston, Mass. Excerpted from an article that originally appeared in the October 2016 issue of *Discover* magazine.

The Power of **PAYING ATTENTION**

MULTITASKING IS A MISNOMER

Your brain has limited capacity for simultaneous thought.

Humans can only hold a little bit of information in mind at any single moment, but your brain deludes you into thinking you understand more about what’s going on around you than you actually do. For example, you probably think you see almost everything in front of you. But you’re actually sipping at the outside world through a straw. Your brain can only take information in little snippets, which it combines to give you the illusion of seamless visual perception.

You can’t pay attention to two things at the same time.

Toggling between tasks requires a series of small cognitive shifts. You may think you’re juggling two tasks at once, but actually you’re switching back and forth very rapidly. For example, if you interrupt a project to check an incoming email or watch a cat video, when you finally return to the task your brain has to expend valuable mental energy refocusing, backtracking and fixing errors.

Whenever you switch from one thought to another, you cognitively stumble a little bit.

Humans have a great ability to change their thoughts from moment to moment, but it comes at a cost. As the cognitive apparatus in your brain reconfigures from one mode of thought to another, you slow down, make more errors and miss things.

You’re less likely to think creatively if you multitask.

Innovative thinking comes from extended concentration, i.e., the ability to follow links between thoughts. Memory is a big network of associations. Truly deep and creative thoughts come from following the path of this network to new and different places. When you try to multitask, you typically don’t get far enough down any path to stumble upon something original because you’re constantly switching and backtracking. Multitasking lowers the quality of your thoughts, making them more superficial, less creative and less innovative.

When neuroscientist Earl Miller, BA ’85, spoke at Kent State’s Commencement in May 2016, he gave the graduates some practical advice that boiled down to one word: *focus*. “Multitasking ruins productivity, causes mistakes and impedes creative thought,” he says. Below he breaks down why that is—and what you can do about it.

Your brain is ill-equipped to handle sensory overload.

In prehistoric days, when the human brain first evolved, it was a different environment. Any new information could be critical to survival—a rustling in the bush might mean a tiger is about to leap out. It was adaptive for our brains to seek out and pay attention to new information, and our brains also evolved to focus on one thing at a time. However, in today’s modern society, the ceaseless onslaught of information has the potential to cripple us. What was once an evolutionary advantage has become a distraction.

You may think you’re good at multitasking, but you’re not.

Studies have shown that people who think they are good at multitasking are actually the worst at it. People who multitask a lot do so because they are easily distracted. Then they rationalize it by convincing themselves that they are really good at multitasking.

IMPROVE YOUR ABILITY TO FOCUS

Block out a period of time.

Think ahead about what you need to accomplish, and plan to focus instead of trying to multitask.

Eliminate as many distractions as possible.

Work in a quiet environment. Put away your mobile phone and tablet. Shut off extra computer screens. Turn off email alerts and shut down your email if you have to. Don’t try to monotask by willpower alone; it’s too hard to fight the brain’s craving for new information. Instead, prevent the urge by removing the temptation.

Work on one task at a time for extended periods.

Your work quality and productivity will improve if you focus on one task at a time.

Take a short break.

If you feel yourself losing focus, walk around a bit. It increases blood flow to the brain and helps restore focus.

Prioritize by doing the most important tasks first.

This removes some of the pressure to multitask as deadlines draw near.

Introduce novelty.

What we perceive is not a faithful representation of the world. Our brain is constantly interpreting sensory inputs, and if something is familiar, the brain begins to gloss over it. For example, to catch errors when proofing a paper, change the formatting or read it aloud to “wake up” your brain and cause it to pay closer attention.

Put away your cell phone when you drive.

Your ability to pay attention to the road while you talk on the phone is another delusion. It is estimated that as many as half of the car accidents in the United States alone are due to distracted driving. Studies have shown that talking on the phone causes drivers to miss as much as half the things in front of them.

Hands-free headsets don’t help much, because it’s the cognitive demands of conversation that cause the distraction. (Talking to a passenger is different, because they know when to shut up.)

And if you find yourself focusing intently on a radio program or an audiobook, etc., turn it off. You have a limited pool of cognitive resources. Multitasking while driving is just plain dangerous.—Earl Miller

alumni LIFE

Mildred Dixon, DPM '44, Tuskegee, Ala., celebrated her 100th birthday on September 7, 2016, the same day Kent State University College of Podiatric Medicine (KSUCPM) celebrated its 100th anniversary. At the celebration, Dixon was presented with the Centennial Award in recognition of her many years of service to the field of podiatric medicine and her support of KSUCPM.

She blazed the trail for women and minorities in podiatric medicine in the post-war South. After being denied access to state and national associations of chiropodists, Dixon petitioned the national association and was given membership in 1949, which allowed her to practice podiatry in Alabama.

In 1956, she was appointed as the first full-time female, African-American podiatrist at the Tuskegee Veterans Administration Hospital, where she created the first podiatric residency in Alabama and established podiatry clinics at VA hospitals throughout Alabama.

She was inducted into KSUCPM Hall of Fame in 2008, and she and her daughter, Denise, created The Dr. Mildred Dixon Endowed Scholarship for Podiatric Medicine in April 2016. For more information see bit.ly/Dixon100.



MELANIE NESTERUK '18

class NOTES

☀ The little sunburst denotes an alumni association member. For a list of life members, visit www.ksualumni.org/lifemembers.

1940s

Mike Milkovich, BS '48, MED '50, Key Colony Beach, Fla., is a legendary National Wrestling Hall of Fame coach and the subject of a new biography, *Mustang*, by Jim Kalin (2016). Milkovich coached wrestling at Maple Heights High School and his Maple Heights Mustangs captured ten Ohio state championships and finished runner-up eight times. The book talks about his influence on Ohio and American wrestling and includes pictures, interviews, stories and historical content.

1950s

Larry McClain, BS '52, Tehachapi, Calif., wrote: "I entered the Air Force in 1952 and graduated from Test Pilot School in 1958. I flew various tests in the RF-4, T-37, F-100, etc., and in Vietnam in the F-4, 1968-1969. I returned to Edwards Air Force Base and ultimately became director of the F-15 test force. I ended my career as Commander, Area 51, and later became test manager for the B-2. Along the way I saw beauty beyond description, suffered moments of terror and loved it all."

Natale Sicuro, BS '57, PhD '64, Lynnwood, Wash., retired in 1993 after being a university president at three institutions—Roger Williams University, Bristol, R.I. (1989-1993), Portland State University, Portland, Ore. (1986-1988) and Southern Oregon University, Ashland, Ore. (1979-1986). He also was chairman of AASCU, the American Association of State Colleges and Universities, based in Washington, D.C. (1962-1964).

1960s

☀ **Mary (Maher) Boehnlein, MA '65, PhD '69**, Brecksville, Ohio, edited *The Independence Township Cemetery Book*, 3rd Edition (2016) and *Historically Speaking Vol II* by Wesley Gaab (2007). Both books were published by the Cuyahoga Valley Genealogical Society of which she is president. She also serves as chair of the Cuyahoga County Lineage Groups. For induction of your ancestors into the lineage group, contact maryalicemaher@gmail.com.

Kenneth Sturtz, BA '67, Morristown, N.J., wrote: "My Amazon Kindle ebook *The Civil War Diary of John James Hancock* recounts Hancock's enlistment in the Union army and fighting with Sherman's army in the Battle of Atlanta and the March to the Sea. For a southern perspective on the Civil War, read my ebook *The Civil War Journal of William H. Youel*—he was a member of the Liberty Hall Volunteers who fought with the Stonewall Brigade from First Bull Run until his death fighting Grant's army at the Siege of Petersburg."

Lynn (Gelgisser) Livingston, BS '68, MED '75, Randolph, N.J., wrote: "The Epsilon Xi chapter of Alpha Epsilon Phi (AEPi) sorority held a reunion in Kent on August 12-14, 2016. Alumni from the classes of 1968-1972 came from all over the United States. We enjoyed a bus tour of campus, a visit to our old sorority house, a guided tour of the May 4th memorial, a luncheon at the alumni center and a tour of the Kent State University Museum. Kent State has aged well, and we're proud to be alumni."



Mary Jo (Endres) Grap, BSN '72, Midlothian, Va., wrote: "**Denise Rowland, BS '72**, Cleveland, Ohio, and I were roommates, randomly chosen to live together in Terrace Hall in fall 1969. We became fast friends. Denise is an elementary school teacher and I am a professor of nursing, and although we don't see each other often, we continue our lifelong friendship, started 47 years ago on the campus of Kent State University!" **Pictured: Denise Rowland and Mary Jo (Endres) Grap.**

1970s

☀ **John Castellana, BA '71**, Birmingham, Mich., was awarded the 2016 American Institute of Architects (AIA) Michigan Chapter Gold Medal Honor. Castellana, FAIA, was presented with the award during a reception at the Henry Ford Museum in Dearborn, Mich., on June 10, 2016.

☀ **Thomas Jordan, BA '72**, Sturgeon Bay, Wis., wrote: "My coffee table book *Sturgeon Bay: The Secret Treasures of Door County* was a Finalist/Best Photography at the 2016 International Book Awards. I am the author and photographer."

Todd Raskin, BS '72, Chagrin Falls, Ohio, has been cited as Cleveland's 2017 "Lawyer of the Year" in Civil Rights Law by Best Lawyers. He is a two-time recipient of the designation, having previously received it in 2013. Raskin is a founding partner of Mazanec, Raskin & Ryder, Co., LPA, which has offices in Cleveland and Columbus, Ohio, and Lexington, Ky.

Denise Rowland, BS '72, Cleveland, Ohio, wrote: "After 43 years in Catholic education, I retired this year, trailing my former Terrace Hall roommate and dear friend **Mary Jo (Endres) Grap '72** by a year. I taught at St. Mary's Mission school in S. Colorado, and then returned to Cleveland to continue my mission work with the Jesuit Volunteer Corps. Over the years I taught all subjects, grades 4-8, my specialties being social studies and language arts. For the past 10 years I taught at Metro Catholic School in Cleveland. No matter where I go I run into former students who warm my heart with their successes!"

☀ **Carter Strang, BS '73, MED '79**, Cleveland, Ohio, partner of Tucker Ellis LLP, has been selected to serve a three-year term as a Cleveland Metropolitan Bar Foundation trustee. He is a past president of the Cleveland Metropolitan Bar Association (CMBA) and the Federal Bar Association, Northern District of Ohio Chapter. Strang created the CMBA's nationally acclaimed Louis Stokes Scholars Program, and he created and coordinates the Tucker Ellis award-winning Pipeline Diversity Program.

☀ **Jack Witt III, MPA '75**, Perrysburg, Ohio, joined Kent State as vice president for human resources in September, following a national search. He is responsible for the oversight of the university's Division of Human



Resources and directs the component activities of the division, which include talent acquisition, equal opportunity and affirmative action, employee development, compensation, records, employee engagement, labor relations, wellness and benefits. Admitted to the Ohio Bar in 1978, he is a member of the American Bar Association and the Society for Human Resources Management.



Judith Verlenich Stinner, BS '68, Normal, Ill., wrote: "A third-floor Fletcher Hall reunion was held on August 12, 2016, at Bricco restaurant in downtown Kent. Fifty-plus years ago, we formed a strong bond during our years at Kent." **Pictured: Joellen Cain, BS '68**, Hermitage, Pa.; **Judy Verlenich Stinner; Carolyn Hoelzle, BS '69**, Canton, Ohio; **Jackie Markiewicz Hyman, BA '68**, Rancho Santa Margarita, Calif.; **Linda Eucker Johnson, BS '69**, Sheffield Lake, Ohio; **Karen Packe Patterson, BS '69**, Westlake, Ohio; **Carol Rensi Ness, BS '68**, Stow, Ohio (**Susan Horwitz, BS '68**, Skyped from Tel Aviv, Israel, to join the fun.)

Roger Stevenson, BA '76, BS '77, Fairlawn, Ohio, was named to the 2017 "Best Lawyers in America" list in Bankruptcy and Creditor Debtor Right/Insolvency and Reorganization Law. He is a partner with Roetzal, a full-service law firm with offices located throughout Ohio, Florida, Chicago and Washington, D.C., and is based in its Akron office.

Donald Brown, BBA '77, Memphis, Tenn., was the speaker for Kent State's Summer 2016 Commencement ceremony for the Kent Campus at the MAC Center on August 20. Brown is executive vice president and chief financial officer of FedEx Freight Corporation in Memphis, Tenn. FedEx Freight is the largest provider of less-than-truckload freight services in the United States. Brown currently serves on

the Advisory Council for Kent State's College of Business Administration.

☀ **Tim Angbrandt, BBA '78**, Brunswick, Ohio, wrote: "I founded ANG Marketing Group, a Northeast Ohio-based strategic consulting firm designed to help small to mid-sized organizations get the resources they need to grow and continue to be successful. I would be delighted to work with fellow KSU alumni!"

1980s

☀ **Daniel Wolfe, BA '82**, Pataskala, Ohio, the associate vice president and general manager of aviation for Nationwide Insurance, was honored as a Living Legend for his outstanding contributions to the aviation industry at a January 2016 gala in Beverly Hills, Calif.



Ray Novotny, BS '80, Youngstown, Ohio, wrote: "I retired in 2016 after a 30-plus-year career at Ford Nature Center in Mill Creek MetroParks, Youngstown, Ohio. By resolution, the Board of Park Commissions granted me the honorary title of Naturalist Emeritus. I'm a life member of the National Association for Interpretation (NAI), an organization for those involved in the interpretation of natural and cultural heritage. In 2016, NAI honored me with three awards: Distinguished Professional Interpreter, Master Interpretive Manager, Thomas Say Naturalist Award of Excellence. This photo captures the best part of my job—leading kayak trips on Lake Newport in Mill Creek Park."

alumni LIFE



Lori (Von Aschen) Siwik, BBA ’84, Broadview Heights, Ohio, wrote: “After I graduated from Kent State, I attended law school at the University of Cincinnati College of Law, graduating in 1987. I was a repeated victim of cyber stalking and harassment in the mid-2000s, and was unable to receive help from local law enforcement since that type of harassment was not specified in state law.

I wrote a bill, with the help of Representative Marlene Anielski and John Murphy from the Ohio Prosecutors Association, which makes cyber stalking and cyber harassment a crime in Ohio. It was passed by the legislature, and my husband and daughter joined me for the signing of Substitute House Bill 151 by the Ohio House Speaker on May 10, 2016. It was then signed into law by Governor Kasich on May 17, 2016 and became effective August 16, 2016.

Seeing this bill become law, and knowing the impact that it will have, is gratifying.” **Pictured (L to R):** Markee Osborne (Representative Anielski’s legislative aide), Missy Siwik, Mark Siwik, Speaker of the House Cliff Rosenberger, Representative Marlene Anielski and Lori Siwik

class NOTES

☀️ **Joseph Milczewski, BS ’83**, Irmo, S.C., received a doctorate in business administration with a concentration in leadership from Baker College in December, 2015.

☀️ **Earl Miller, BA ’85**, Somerville, Mass., professor of neuroscience at MIT, was awarded the Goldman-Rakic Prize for Outstanding Achievement in Cognitive Neuroscience by the Brain and Behavior Research Foundation for his work on the neural circuitry of cognition. (For more about his research, see story on page 20.)

Leah Rafferty, BA ’86, Hudson, Ohio, co-starred in a commercial with Cleveland celebrity “Big Chuck” Schodowski. Rafferty is a producer on the show “Golden Opportunities,” which airs on WKYC-TV in Cleveland. As the proprietor of a Little Free Library, she was featured in an *Akron Beacon Journal* story on November 14, 2014.

Michael Hermann, MA ’89, Salina, Kan., who has served Kansas Wesleyan University as director of athletics since 2013, was recently promoted to vice president and director of athletics by President Matt Thompson.

1990s

Lori (Lamm) Riley, BS ’92, Madison, Ohio, was named superintendent of Conneaut Area City Schools and began August 1. She and husband **Michael Riley, BS ’92** reside in Madison with daughter Sarah.

Leila Jalili, BA ’95, Baltimore, Md., is currently working for Under Armour as senior designer, outdoor performance, designing technical outerwear and other athletic apparel.

Victoria McCartney, AA ’97, Minneapolis, Minn., wrote: “My husband **Shane McCartney** (who attended Kent State from fall 1993 to

spring 1995) and I are pleased to announce our start-up business called Guerrilla Entertainment LLC, dba Midwest Drone Racing, in Edina, Minn. We host professional drone racing events for pilots (www.guerrillafun.com). Shane is now the vice president of STEM and Community Outreach for the International Drone Racing Association, and he will be working with middle and high schools to put drone education programs in place to teach kids how this technology can lead to viable career paths.”

Eric Cameron, BA ’91, Waxhaw, N.C., wrote: “Friendships that started as freshmen in Verder Hall in 1987 have continued throughout the last 28 years. Recently a reunion trip to Seven Springs, Pa., brought the group together, pictured here at Falling Water.” **Pictured: John Hanslik, BBA ’92**, Mentor, Ohio; **Rob Crane, BBA ’91**, Mentor, Ohio; **Jeffrey Bailey, MArc ’91**, Buffalo, NY; **Bob Kenneley, MBA ’92**, Copley, Ohio; **Keith Glivic, BBA ’91**, Canonsburg, Pa.; **Eric Cameron** (not pictured: **Mario Avarello, BBA ’92**, Buffalo, NY)



Isabelle Bibet-Kalinyak, MBA ’98, Hudson, Ohio, joined the Cleveland office of McDonald Hopkins LLC, a business advisory and advocacy law firm, as an associate attorney in their national Health Care Practice Group. She is experienced in health care and immigration law.

☀️ **LeRodrick Terry, BA ’98**, Chandler, Ariz., accepted the position of vice president of student affairs at Rio Salado College, effective July 1, 2015, following a national search.

2000s

Megan (Nellis) Burnside, BS ’00, Pittsburgh, Pa., wrote: “**Chris Burnside, BA ’01**, and I are excited to share a collaborative project that was released by the Dayton Writers Movement, a new creative company dedicated to telling well-written stories with a mission. “Unwritten” is an eight-episode serialized podcast (with writers and actors from Ohio) that launched on September 1. The dramatic and comedic podcast brings up important topics surrounding LGBTQ, sexual violence and mental health.”



Arthur Shulsky, BA ’10, MBA ’11, and **Alisha Maria Neubauer, BA ’13**, were married in Avon, Ohio, on July 2, 2016. Many Kent alumni took part. The couple now reside in Los Angeles pursuing their dreams.

Virginia (Dressler) Hall, BA ’01, MLIS ’07, Newbury, Ohio, assistant professor and digital librarian at Kent State University Libraries, presented “Digitally Archiving History: A Game Plan for Large, Unruly Archival Collections with Limited Staffing” at the Archiving 2016 Conference at the National Archives in Washington, D.C., on April 20, 2016.



Kevin Mittelmeier, BA ’13, and **Kristen Spiker, BSN ’14**, met at Kent State in 2010 and were married on September 10, 2016 at the Grand Barn at the Mohicans. They reside in Nashville, Tenn., with their two dogs.



☀️ **Paul Bassett, BSN ’11**, Norwalk, Conn., recently climbed the Inca Trail to Machu Picchu in Peru to bring awareness to multiple myeloma—a form of cancer more common in men over age 65 and twice as common in African-American men as in Caucasian men. He participated in the inaugural Moving Mountains for Multiple Myeloma partnership with Takeda Pharmaceuticals and *Cure Magazine*, which brought together a team of patients, physicians, nurses and researchers to conquer a mountain. Upon hearing of Kent State president Beverly Warren’s breast cancer diagnosis last spring, Bassett contacted her for permission to include her name on the banner and his personal tribute shirt.

☀️ **Jennifer (Noble) Miller, BBA ’02, MED ’06, MBA ’09**, Streetsboro, Ohio, has been named assistant dean for student and accreditation services in the College of Public Health at Kent State University.

Kyle Lyons, BSN ’03, Severn, Md., was promoted to the rank of Commander (O-5) in the U.S. Public Health Service. He is a senior policy adviser to the U.S. Surgeon General and is stationed in Washington, D.C. Lyons currently resides in Severn, Md., with his wife, April, and son, Trystan.

☀️ **Paul Marnecheck, BA ’03, MA ’10**, North Royalton, Ohio, has been appointed to the Diocese of Cleveland Catholic Charities Board of Directors. His term will run until 2020 and he will be assigned to the Board Education/Development Committee and the Program Committee.

Edmund Rossman, MLIS ’03, Cleveland, Ohio, adult services librarian at Shaker Heights Public Library, Shaker Heights, Ohio, is author of *40+ New Revenue Sources for Libraries and Nonprofits* (ALA Editions).

☀️ **Steven Flaughers, BS ’04**, Akron, Ohio, owner and CEO of Proforma 3rd Degree Marketing, has acquired three printing/promo businesses in the past two years. Proforma ranked 1,794 in the annual *Inc. 5000* list of the top 5,000 fastest-growing private companies in the United States.

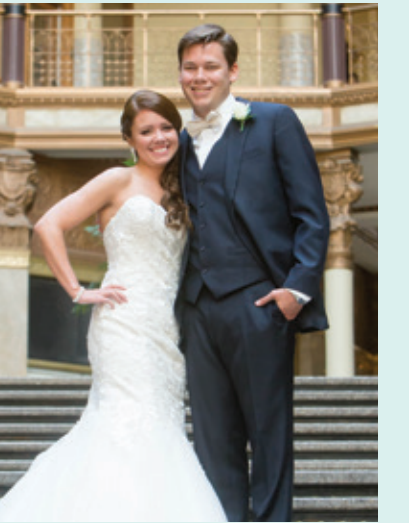
☀️ **Russell Galeti, BA ’05**, Washington, D.C., and **Mary (Wagley) Galeti, BA ’05**, announce the birth of their first child, Latham Elizabeth “Bizzy” Galeti, on June 27, 2016. Russell Galeti also was accepted as a term member to the Council on Foreign Relations in Washington, D.C.

Heidi (Ludwick) Baumgart, BS ’06, Chardon, Ohio, has been named marketing director at Event Source in Cleveland, Ohio. Event Source is a leading Midwest event rental company that purchases, inventories, delivers and rents luxury event products in Cleveland, Columbus, Detroit and Pittsburgh. She will be leading a rebranding charge as well as new product launch initiatives.

Shelley Blundell, BA ’06, BS ’07, MLIS ’09, PhD ’15, North Canton, Ohio, is now an assistant professor, journalism and communication studies, at Youngstown State University.

Matthew Major, BA ’07, Hoboken, N.J., joined national law firm Wilson Elser as an associate in new insurance coverage at its New Jersey office.

Holly Mueller, BS ’07, Lakewood, Ohio, started Holly M Communications, a strategic public relations and communications firm, in May 2016. She and her team provide professional communications training and consultation services for clients who need help telling their story—whether it’s through improving their media relations presence, delivering effective speeches and presentations or providing strategic guidance for global and domestic marketing campaigns (www.hollymcommunications.com).



Shanda (Stout) Essig, BBA ’12, and **Daniel Essig, BBA ’12**, were married on September 20, 2015 in Cleveland, Ohio. They met in high school and attended Kent State’s College of Business Administration together. They now reside in the Washington, D.C., area.

alumni LIFE

Singing the national anthem in a packed stadium is nothing new for **Jon Ridinger, BS '08, MA '09**, a Kent native who performed at the first game of the American League Division Series at Progressive Field for the Cleveland Indians against the Boston Red Sox in October. "It was absolutely exhilarating," he says. "Being at Progressive Field when it was not only full, but full of emotion, was something else."

Ridinger, who is a substitute teacher and works in guest services for the Cleveland Browns, began publicly singing "The Star-Spangled Banner" in 1998 as a student at Kent Roosevelt High School. He then went on to sing at many Kent State athletic events. "My education at Kent State gave me excellent vocal training and lots of experience," says Ridinger. He had his major league debut in April 2011 after he had sent the Cleveland Indians a recording of a previous anthem performance and a month later was asked to sing at a game. Since then, he's been asked back to perform many times, and he also has sung the national anthem for other professional and minor league sports teams, including the Akron RubberDucks and the Cleveland Monsters.

Ridinger says when he sings the anthem he feels a deep sense of patriotism and tries to perform the difficult song to the best of his ability. We asked him to give those of us in the stands a few pointers so we can participate:

It's okay to sing along. If you want to sing, feel free to do so, whether the anthem is being played instrumentally or sung. As a performer, when I hear people singing along, that means they are comfortable with how I'm singing it.

Check the scoreboard for the lyrics. While I believe we all should know the words to our national anthem by heart, I realize not everyone does, for a variety of reasons. If that is the case, usually the lyrics will be displayed on the main scoreboard or an auxiliary one.

It's okay to hum, too. If you just don't feel like singing, there's nothing wrong with humming along either. Of course, you can also apply that if you happen to forget the words!

Do your best. Don't let the range of the notes deter you. While "The Star-Spangled Banner" is certainly not the easiest song in the world to sing, it is well within most people's ranges.

Adapted from an article by Kate Schwanke '17 that first appeared in eFlash.



Jon Ridinger, BS '08, MA '09, sings the national anthem for a Cleveland Indians game at Progressive Field.

COURTESY OF JON RIDINGER

class NOTES

April Samuelson, BS '08, Columbus, Ohio, recently graduated with her MBA from the Kelley School of Business at Indiana University. She will be starting as a marketing program manager at Vertiv Company, formerly Emerson Network Power in Westerville, Ohio.

2010s

Jamie Piero, BA '10, Massillon, Ohio, wrote: "I'm chasing dreams of being an entrepreneur—opening a healthy meal prep, pre-packaged meal plan café, Clean EatZ, in Northeast Ohio."

Send Us Your Class Note

We'd love to hear from you!

To share your news, complete the form at www.ksualumni.org/classnotes (you may include a high-resolution image in JPEG, GIF or PNG format) or write Kent State University Alumni Association, Center for Philanthropy & Alumni Engagement, P.O. Box 5190, Kent, OH 44242.

Limit your notes to 100 words or less and include your class year, city, state and degree(s). Notes may be edited for length or clarity and published as space allows.

Issue:	Deadline for submissions:
Fall	May 30
Spring	September 30
Summer	January 31

Ryan Stowell, MEd '10, Cortland, Ohio, recently accepted the principal position at Bristol Elementary School in Bristolville, Ohio. He and his wife **Lisa Stowell, MM '11**, reside in Cortland, Ohio, with their daughters Rachel and Lauren.

Elizabeth Davis, MEd '11, Salineville, Ohio, has joined McDaniel College, Westminster, Md., as the new director of international and off-campus programs. Davis, who also served as an education abroad advisor at Kent State University, will oversee McDaniel's education abroad and off-campus study programs, including study at McDaniel College's European branch campus in Budapest, Hungary, and student exchange programs with Université Saint-Louis in Belgium and Africa University in Zimbabwe, as well as faculty-led study trips. She is currently pursuing her PhD in educational administration—higher education from Kent State.

JoAnna Schofield, MLIS '12, Stow, Ohio, became the youth programming coordinator for the Cuyahoga County Public Library on June 13, 2016. She had previously been the early childhood librarian at the Highland Square Branch of the Akron-Summit County Public Library.

Miyoshi Levy, MPH '16, Akron, Ohio, wrote: "I want to thank everyone that I have met at Kent State University for being so kind, generous and helpful to me—especially Tasha, Jackie, Paulette, and Dr. Z. Congratulations to the graduation MPH class of 2016!!!"



Marissa Manno, BS '12, Akron, Ohio, wrote: "**Scott Hooper, BSN '14**, and I were married on October 1, 2016 (Homecoming!) at a church on [the Kent Campus], held our reception at the Kent State Hotel and Conference Center and took some of our wedding photos on campus. We wanted everything in Kent because that's where we met as freshmen in 2009! Scott is an orthopedic registered nurse at St. Thomas Hospital, and I am a sonographer at Akron Children's Hospital." The couple are pictured above at the Poetry Park adjacent to the Wick Poetry Center along the Lefton Esplanade.

Flash Chats

Connect with alumni online! The Kent State Alumni Association is debuting a new alumni speaker series, FlashChats, this spring. You can watch each 30-minute interactive storytelling session with an alum through Facebook Live video on your computer, phone or tablet (<https://www.facebook.com/ksualumni/>). Featured speakers will touch on their time at Kent State University, talk about their career and personal accomplishments, offer professional advice and answer your questions.

April 11, 2017
Lauren Lee, BS '02
Associate Producer, CNN, Atlanta, GA

April 25, 2017
Todd Mesek, BS '90
Vice President, Marketing & Communications,
Rock and Roll Hall of Fame and Museum, Cleveland, OH

FlashChat series run from 12:30 to 1 p.m. EST.
See www.ksualumni.org/flashchats for more information.



Kent State alumni and friends pack boxes of food at the Greater Cleveland Food Bank in 2016.

More than 300 Kent State alumni and friends helped communities across the country in 2016. They prepared almost 20,000 meals, created activities for nursing home residents, relocated plants at a zoo, walked dogs at shelters and much more.

Eric Zupansky, BBA '03, Cleveland alumni area representative, coordinated a "Day of Service" event at the Greater Cleveland Foodbank's community food distribution center. He and his team of 15 other Golden Flashes and friends were part of an assembly line to build, weigh and gather together boxes of food for around 900 families.

"It was awesome seeing how many generations of Kent State alumni came together to make a difference in the greater Cleveland area," Zupansky says. "Everyone was sharing stories!"

The group is coming together again at this year's Alumni Day of Service on Saturday, April 29, and they welcome more area alumni to take part in the fun.

In addition to Cleveland, service sites are planned throughout Ohio, as well as across the country—and, for the first time, around the globe, with a site in Jordan.

JOIN US!

To volunteer for the Alumni Day of Service on **April 29**, call 888-320-5368 or visit www.ksualumni.org/dayofservice for a complete list of service sites.

Service sites include:

- Akron, OH (3 locations)** Akron Canton Regional Food Bank, Haven of Rest, Akron Zoo
- Amman, Jordan** Mother Teresa Amman Center
- Beachwood, OH** The Gathering Place
- Cleveland, OH (3 locations)** Greater Cleveland Food Bank, Ronald McDonald House of Cleveland and Association of African American Cultural Gardens
- Columbus, OH** Camp Mary Orton
- Canton, OH (2 locations)** Save a Mom Pregnant Dog Rescue and Stark Parks
- Kent, OH** Habitat for Humanity Restore
- Los Angeles, CA** Amigos de Los Rios
- Newbury, OH** Lake-Geauga Habit for Humanity Restore
- New Philadelphia, OH** Friends of the Homeless/Pathways to Wellness
- Painesville, OH** Lake County Historical Society
- Phoenix, AZ** Phoenix Zoo
- Pittsburgh, PA** Pittsburgh Zoo & Aquarium
- Raleigh, NC** Neighbor to Neighbor
- Ravenna, OH** Loaves and Fishes
- San Francisco, CA** San Francisco Food Bank
- Washington, DC** Food & Friends
- Wooster, OH** Habitat for Humanity Restore

in MEMORY

The little sunburst denotes an alumni association member. For a list of life members, visit www.ksualumni.org/lifemembers.

- Walter Waltenbaugh '43**, July 16, 2016
- Janice (Kindler) Barden '48**, July 31, 2016
- Charles Raber '49**, May 30, 2016
- Richard Vogenitz '49**, August 31, 2015
- Thomas Paine Howells '50**, January 7, 2016
- Gordon Rice '50**, June 8, 2016
- William Shie '50**, August 16, 2014
- Thomas Pappas '51**, July 6, 2016
- Raymond Pelanda '52**, September 22, 2016
- Evelyn Vaughan Day '53**, February 22, 2016
- Lowell Smith '53**, August 25, 2016
- Yvonne Thomas '54**, December 19, 2014
- Barbara Bowling '55**, June 5, 2016
- Frank Vasarhely '56**, December 29, 2015
- Edward Galloway '58**, February 27, 2016
- Alfred Kinney '58**, August 19, 2016
- Blanford Fuller '59, MA '68**, October 30, 2012
- Gene Budd '60**, February 29, 2016
- Robert Potter '60**, July 31, 2015
- Oliver Foster '61**, March 17, 2016
- Norman McVicker '61**, July 7, 2016
- Hubert Ammons '62**, February 2, 2016
- Helen Molnar '63**, July 15, 2016
- Roger Brown '64**, March 27, 2016
- Kenneth Niemann '64**, July 14, 2016
- Frances Anne Fine '66**, October 20, 2016
- Edward Hoffee '66**, May 19, 2016
- John Shoop '68**, July 17, 2016
- Susan Masirovits '69, MLS '72**, April 25, 2016
- Kevin Murphy '69**, June 7, 2016
- William Stone '69**, January 4, 2016
- John Franklin Young, MEd '69**, August 6, 2016
- Louis Shainker '71**, December 29, 2015
- Barry Cohen '72**, February 26, 2016
- Pamela Woodward '73**, November 26, 2015
- Richard Brichacek '74**, December 12, 2015
- Timothy Callahan '74**, May 28, 2016
- Thomas Wareham '74**, September 7, 2016
- Thomas Blabac '75**, February 4, 2015
- George Clemens '75**, May 24, 2016
- Jeffrey Maring '75**, June 7, 2016
- David Morris '75**, February 26, 2015
- Raeanna Small '76**, June 15, 2016
- Kathleen Flynn '77**, May 12, 2016
- Karen Kappler '77**, February 12, 2016
- David Norris '77**, September 8, 2016
- Don Stiles '77**, October 9, 2015
- Gary York '77**, July 26, 2015
- Russell Pry '80**, July 31, 2016
- Joan Wilson '80**, July 30, 2016
- Susan McBride '81**, September 20, 2015
- Barbara Shie '82**, January 20, 2016
- Joseph Remlinger '88**, June 2, 2016
- Janis Tregoning '89**, June 4, 2015
- Mary Shaker '92**, June 22, 2016
- Elizabeth Ann Lontor '07**, August 10, 2015
- Bradford Slease '07**, May 31, 2015
- James Schneider '09**, May 11, 2016
- Timothy Roland '10**, June 8, 2016
- Tara Clossman '14**, August 20, 2016

FACULTY/STAFF

T.N. Bhargava, emeritus professor of mathematics, Department of Mathematical Sciences, January 25, 2017

Marcia Drake, Dining Services, Kent Market, Kent Student Center, October 13, 2016

Rozell Duncan, PhD '96, associate professor, School of Communication Studies, August 15, 2016



Disc Jockeys

This spring marks the 40th anniversary of Kent State’s Ultimate Frisbee team, says Jerome Wachholz, BS ’79, who alerted us to that fact and sent in the photo above. When he first attended Kent State in the winter of 1977, Wachholz joined the KSU Frisbee Club, which met in Wills gym.*

“That spring, The Aces, a Frisbee demonstration team from Illinois, put on a demo in front of the library and student center,” he recalls. “We invited some members of the Oberlin College Ultimate team, and they taught us the rules of Ultimate.” (The game of Ultimate Frisbee had begun at a high school in New Jersey in 1968 and spread to universities across the country in the 70s.)

A Kent State University Ultimate team was born. Players traveled to various colleges for matches and competed in tournaments at schools like Michigan State, the University of Pittsburgh and Ohio University.

“We all drove ourselves,” Wachholz says. “We registered as a club to get some gym time, but we didn’t have any funds from the university.” (Ultimate requires only field space and a disc—which is heavier

“I can only identify about half of the players, some just by first name,” says Jerome Wachholz, BS ’79, who sent in this photo of the team, taken in 1979. (He’s in the back row, with a bandana and glasses on, looking down.) Let us know if you recognize yourself!

and sturdier than the familiar recreational Frisbee, patented in 1958.)

The original KSU team had seven members, the minimum number of players required, which meant everyone played the entire game—although it is common practice to sub in players throughout the game because of the constant game play. “It was a lot of running,” says Wachholz. “The other teams couldn’t believe we were still standing.”

Although highly competitive, Ultimate is self-officiated and places the responsibility for fair play on each player. This emphasis on the “spirit of the game”—encouraging mutual respect among competitors, adherence to agreed-upon rules and the joy of play—is a defining feature of the sport.

Wachholz says that although they lost every game of their first tournament at Michigan State, they won their share of games as they progressed. And he had fun playing. “We didn’t have much in common other than the game,” he says. “But we all became friends and would stick around after practices and go for a beer now and then.”

Today, the Kent State Ultimate Frisbee Club has 18 members, and they still travel to tournaments at other universities. Most club funds come from dues paid by every member who has been on the team for more than one semester.

Senior Justin Kenney, an integrated social studies major and president of the Ultimate club, says the spirit of the game is just as important now as it was when Wachholz was playing.

“Playing the game without officials adds integrity,” says Kenney. “And there are no refs to be upset with, because we make our own calls.” ⚡ —Lauren Rathmell ’17

**Wills Gym was the first dedicated gymnasium on the Kent Campus. Completed in 1925 and razed in 1979, its former site is now the parking lot behind Cartwright Hall.*

Send us YOUR Flashback:

Share your memories from Kent State and they may appear in a future issue of *Kent State Magazine*. Email your stories and photos to magazine@kent.edu.

HERE IN THE VINEYARD OF PROVISION

The morning
floats up faint
with pale fog,

luminous rising
in first sun
flashed up
beyond the eastern
field.

Here there is no war.

We are never
grateful enough
for the world so quiet
we think ourselves
alone on earth;

or for the stillness
of all the yellow leaves

or the horses gazing
over the fence.

by Mary Greer, MEd ’84
Shalersville, Ohio

ILLUSTRATION BY ZUZANA KUBISOVÁ '17



“You were made and set here to give voice to this, your own astonishment.” —Annie Dillard

share your **VOICE**

In partnership with the Wick Poetry Center, *Kent State Magazine* features a poem by one of our readers in each issue. To submit your poem, visit travelingstanzas.com, click “Submit,” and label it “Magazine Entry.”



Celebration Time!

The Kent State Golden Flashes won the 2017 Mid-American Conference Men's Basketball Tournament March 11 at Quicken Loans Arena before 10,376 fans. By defeating the Akron Zips 70-65, they earned an automatic bid to the Big Dance—their first return trip to the NCAA Men's Basketball Tournament since 2008. Pictured: MAC Commissioner Steinbrecher presents Coach Senderoff with the trophy. See page 6 for Kent State Athletics' launch of a new "Gameday Experience."