FANTASTIC FOUR

Accomplished young alumnae achieve national acclaim.

Christine Fleming
(GRS '07, '10)
Assistant Professor
Columbia University

Our Emmy-Winning Directors Talk Show Biz 20
Insulin Discovery Makes History 30
Check Out What’s New Uptown 36
Circle Your Choice for Smart Living

South Franklin Circle
Friendly village ambiance in the scenic Chagrin Valley

Judson Manor
Elegant living in the educational and cultural hub of University Circle

Judson Park
The richness of the Heights and the culture of University Circle

Smart Living at Home
Senior living and health care services in your own home

Premier Senior Living that's Ahead of the Curve

(216) 791-2004
judsonsmartliving.org
Fantastic Four
Our alumnae dominate national list.

Unlocking the Secrets of Insulin
A recent breakthrough could make managing diabetes easier.

Welcome to Uptown
Take a tour of our neighborhood’s newest development.

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Trendy
Under the radar no more.

Two years ago The Huffington Post cited Case Western Reserve as one of nine “trendiest colleges”—namely the one that “Flies Under the Academic Radar ... But Shouldn’t.” We couldn’t agree more.

As our growing applications show, high school students increasingly recognize our appeal.

Last year we enrolled the largest, most diverse and most academically accomplished class in our history. And this year applications jumped 25 percent.

Our undergraduate applications have climbed 150% since 2008.

In response to a digital version of “A Big, Bright Future” (Fall/Winter 2012) announcing CWRU’s largest, most diverse and most accomplished undergraduate class in history, on thedaily.case.edu:

Case Western Reserve is a very special place. Nobody comes to CWRU for fashion, or for parties, or for style. They come here for substance. They come here to be changed. To be made different. Better.

There is a difference between the hundreds upon hundreds of regular schools and the one and only Case Western Reserve. Welcome to the next entering class … I can’t wait to see what you do for the world …

William C. Ferry (CWR ’97)
Bay Village, Ohio

In last issue’s feature about Case Western Reserve University’s think[box], we failed to credit the designer of the wrench pictured on pages 6-7: mechanical engineering student and think[box] teaching assistant C.J. Valle. We regret the omission.

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Laura Connalil (CWR ’99, MGT ’02)
Kathleen, Ga.

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What makes a university great?

The question is much on our minds these days as the Case Western Reserve community considers its aspirations for the next five years. In 2008, we released Forward Thinking, our first strategic plan in nearly two decades. Out of that document grew major campus initiatives in diversity, international affairs and interdisciplinary research—along with a new 82,000-square-foot university center scheduled to open next year.

Since 2008, we have launched a $1 billion capital campaign, and raised more than $820 million toward our goal. We have won the largest National Institutes of Health grant ever awarded in our region—$64.6 million to develop and bring medical breakthroughs to the patients who most need them. And we have set new records for undergraduate applications and the academic quality and diversity of our incoming classes.

While it is exciting to see so much momentum, it can be sobering as well. We reflect on these questions amid a context of rapid change. What is the true value of college? What unique benefits are found in residential education? How do online offerings factor into the learning equation? How do we enhance instruction regardless of setting? And so forth.

To find answers, we experiment. This winter, we launched our first online degree program through the Jack, Joseph and Morton Mandel School of Applied Social Sciences. This spring, we offer two open online courses (p. 12), one in international criminal law, and the other on the role of emotional intelligence in leadership. We continue to raise funds for think³, an ambitious initiative to create a 50,000-square-foot space where students and faculty can turn ideas into products—and, ultimately, bring them to market.

As with Forward Thinking, the plan that emerges later this year will be a living document. Its principles will guide us, but we also will welcome serendipitous moments. Indeed, the importance of adaptation is underscored powerfully in this issue’s cover story (p. 22). Goals are good, but, ultimately, people and their passions make the most impact. The more we are a place that attracts the brightest minds, the more we will excel. The more we achieve, the more we will appeal to people of great ambition and talent. We saw that virtuous cycle come to life during the past five years. Our task now is to make the Case Western Reserve forward as a top institution for learning and discovery.

One of the greatest advantages of a university campus is that it is a place of ideas. Over the past several months, our community has engaged in robust conversations about who we are, and what we can be. What are our greatest strengths? Our most promising opportunities? How do we create a community that is welcoming and inclusive? How do we encourage innovation and promote meaningful research? And how do we best contribute to progress within our community, nation and the world?

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Our challenge now is to seize the opportunities we have created, realize the rich potential that exists and catapult Case Western Reserve forward as a top institution for learning and discovery.

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More than a dozen solar trackers like this one catch rays at Case Western Reserve’s Sun Farm, part of the university’s Solar Durability and Lifetime Extension Center. The trackers connect to the region’s electrical grid, but power generation is only part of the picture. Aiming to design longer-lasting materials and solar energy equipment, the center studies how technologies such as solar panels hold up to laboratory-accelerated testing and real-world environmental exposure.

PHOTO: RUSSELL LEE
University attracts record 18,000+ undergraduate applicants

More than 18,000 students applied to be part of Case Western Reserve’s undergraduate Class of 2017—a 25 percent increase in applications over last year and a 150 percent jump since 2008. Enrollment leaders say the university’s focus on hands-on learning and real-world experience resonates with prospective students and their families. Once they visit, Cleveland itself also proves an asset. People are drawn to cultural powerhouses like the recently renovated Cleveland Museum of Art, as well as the recently renovated University Circle neighborhood. —JF

Top of Mind

HR Magazine named Case Western Reserve Distinguished University Professor Richard Boyatzis, PhD, as the ninth most influential international thinker in its survey of more than 11,000 human resources directors worldwide. Boyatzis, a New York Times bestselling author renowned for his expertise on emotional intelligence and leadership, joined a roster topped by Harvard professors Rosabeth Moss Kanter and Chris Argyris and including such celebrated management scholars as McGill University’s Henry Mintzberg and Stanford University’s Jeffrey Pfeffer. —JF

Teaming Up

New patients at the Case Western Reserve School of Dental Medicine clinic are getting more out of their visits, thanks to a program that aims to make the dentist’s chair a one-stop shop for a broader spectrum of health care. Students from the School of Dental Medicine and the Frances Payne Bolton School of Nursing have teamed up for CHOMP, short for the Collaborative Home Oral Health, Medical Review and Health Promotion. The interprofessional initiative partners nurse practitioner students with dental students to provide preventive health services within a patient’s regular dental appointment. The three-year test program kicked off in late January and is funded by a grant from the federal Health Resources and Services Administration. For the duration of the grant, new patients can have their blood pressure and cholesterol checked, and even get flu shots, at no charge beyond what they pay for their regular dental exam. Patients also can receive treatment for the flu, strep throat and other non-chronic illnesses. Faculty members from both schools monitor and guide student teams, and patients who need follow-up medical care are referred to local health care providers. —JF

What’s drawing crowds to Case Western Reserve? Scan the code or visit case.edu/trendy to see for yourself.

Oct. 6, 2012

The American Chemical Society selects Distinguished University Professor Alan J. Rocke, PhD, as a fellow in recognition of his expertise in the history of chemistry.

Oct. 22

The Case Western Reserve community honors the life and legacy of entrepreneur and philanthropist Tinkham Veale Jr. at a campuswide memorial service honoring the 1957 graduate, who passed away Sept. 18 at the age of 97.

Nov. 1

HBO’s hit CERU brings star of TV’s The Wire and The Big Bang Theory, Mayim Bialik, to campus to talk to students about how she’s juggled careers in acting and research.

Nov. 6

One of Case Western Reserve’s First Gates Cambridge Scholar

Jason Tabachnik, 22, has been named a U.S. Gates Cambridge Scholar—the first in university history. He’ll join 36 other students from the United States as part of the program, established through a $30 million donation to Cambridge from the Bill and Melinda Gates Foundation in 2000. Competition for a spot in the program is fierce—this year’s group included a field of 760 applicants, with 83 finalists facing a panel of academics from Cambridge and the U.S. for interviews in Washington, D.C., in February. Tabachnik graduates this spring with two degrees from Case Western Reserve—a bachelor’s degree in mathematics and physics and a master’s degree in physics. He earned some 30 hours of credit in high school, which allowed him to take graduate classes in his sophomore year. This honor comes a year after Tabachnik won a Barry M. Goldwater Scholarship for his work on developing mathematical models that demonstrate how anti-lasers could boost the efficiency of solar cells. He co-authored two papers based on these projects that have been accepted for publication in academic research journals. Tabachnik plans to pursue a master’s degree in mathematics at Cambridge. He aims to earn a PhD and, ultimately, to become a theoretical condensed-matter physicist. —JF

Oct. 20, 2012

Jill Abramson, the New York Times executive editor, talks about her career as an editor and journalist. Abramson, the first woman to hold the executive editor position, spoke at The Jerome Weisner Lecture about her career and about the challenges that women face in the male-dominated world of news media. The lecture was held at the Weisner Center, the home of the Weisner Chair, an endowed chair created by the Massachusetts Institute of Technology to support research and education in the fields of science and technology.

Nov. 8

Join Andrew, the Shirley Temple Waxman Professor of International Public Policy and Writing, pays tribute to Lt. Col. David Cabrera, the first military social worker killed in action, in Philadelphia Post magazine.

Jan. 14, 2013

CMU’s and the Cleveland Museum of Art give a joint purchase of the Cleveland Institute of Art’s property on the corner of Bellflower Road and East Boulevard.

Jan. 25

Scholar and civil rights activist Lani Guinier, JD, delivers the keynote address at the annual Martin Luther King Jr. Convocation.

Student Named CWRU’s First Gates Cambridge Scholar

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Paralympian Shares Her Story

Doctors told Jennifer French she’d never leave her wheelchair after a 1998 snowboarding accident left her a quadriplegic. But with determination and help from cutting-edge neurotechnology, the now-41-year-old North Royalton, Ohio native is back on her feet. She walked down the aisle at her 2001 wedding and brought home a silver medal in sailing at the 2012 Paralympic Games in London.

The year after her injury, French entered a clinical trial for muscle-stimulation implant technology from the Cleveland Functional Electrical Stimulation (FES) Center, a research consortium that includes Case Western Reserve, the Louis Stokes Cleveland VA Medical Center and MetroHealth Medical Center. The technology has allowed her to walk and move short distances from her wheelchair. Since then, she has continued to participate as a research volunteer, and two years ago, participated in a clinical trial of a system that tripled the number of electrodes activating paralyzed muscles.

French released a book about her experiences, On My Feet Again: My Journey Out of the Wheelchair Using Neurotechnology, shortly after her Paralympic success. She is also the executive director and co-founder of Neurotech Network, a nonprofit organization that supports education, advocacy and access to neurotechnology.

Flannery Serves on White House Panel

Since December’s tragic shooting at Sandy Hook Elementary School in Newtown, Conn., the country’s search for ways to reduce gun violence has intensified dramatically. Front and center in that dialogue is Case Western Reserve’s Daniel Flannery, PhD, an internationally recognized expert on the subject.

In recent months Flannery has provided interviews and perspective to a wealth of media outlets, including CNN. Then, the White House asked the Dr. Semi J. and Ruth W. Begun Professor at the Jack, Joseph and Morton Mandel School of Applied Social Sciences to participate in a national panel on enhancing campus safety. Flannery joined education and safety experts in Washington, D.C., in February to discuss ways to make schools and other public places safer.

The White House hosted three panels on the emergency management needs of universities, schools and places of worship. Flannery participated on the higher education panel, moderated by FBI Executive Assistant Director Richard McFeely. The session used the 2007 Virginia Tech shooting as a starting point for discussion. Flannery recommended examining successfully averted incidents of violence for lessons in prevention and discussed how threat assessment teams could help institutions recognize students and staff who might pose a risk to the community.

“If schools can be places where we can recognize when kids need help and get it to them early enough,” he says, “we can be more successful at diverting these incidents.” —DANA SWIEG

TOP Of Our Game

According to Washington Monthly, which rates the nation’s universities by their contributions to the common good, Case Western Reserve University consistently ranks among the nation’s top colleges.—No. 37 in the county, according to U.S. News & World Report’s 2013 list of national universities. But that’s not the only list the university is climbing. CWRU ranks: 

No. 18 on the Peace Corps’ top volunteer list
No. 24 in Lumosity’s list of America’s smartest colleges
No. 20 in the university’s graduate and professional programs also hold top spots on U.S. News & World Report’s annual rankings list:

No. 5 of School of Law’s Healthcare Law Program
No. 7 in the School of Medicine’s Pediatrics Program
No. 9 in the School of Social Sciences Social Science Work Program
No. 11 in the School of Social Sciences School of Management’s Part-Time MBA

Get the latest rankings at case.edu.

Writing Against Time by Michael Clune, PhD, assistant professor of English (Stanford University Press, paperback, $20.98). The book analyzes the work of five of the world’s greatest 20th-century writers striving to create timeless works in a familiar over time. Clune explains how neurobiological forces designed for our survival make interest fade, and examines how some of the world’s most ambitious writers strive to create timeless works in spite of that challenge.

Designing to Avoid Disaster by Thomas Fisher (G35: BD), dean of the College of Design at the University of Minnesota (Routledge, paperback, $34.95). Catastrophic events from the I-35W bridge collapse in Minneapolis to the foreclosure crisis stem from what Fisher calls fracture-critical design, in which structures and systems fail completely if one part does not perform as intended. He traces the impact of fracture-critical thinking on everything from the economy and politics to educational and infrastructure systems.

Nothing to Confess by Donald Heick, MD, professor of medicine at Case Western Reserve and medical director of transportation services at University Hospitals Case Medical Center (Roundfire Books, paperback, $16.95). In this novel, Lance Turner’s successful record as a donor coordinator for the Ohio Organ Bank is jeopardized when six of seven transplant patients simultaneously become ill within a month of receiving organs from a young, seemingly healthy donor.

Money and Banks in the American Political System by Kathryn C. Lavelle, PhD, Ellen and Dixon Long Professor of World Affairs (Cambridge University Press, paperback, $29.95). Lavelle argues that the political sources of instability in finance emerge from the nexus between market innovation and regulatory arbitrage. She explores monetary, fiscal and regulatory policies within a political culture characterized by the interdependence of business and state, and mistrust of the concentration of power in any one political or economic wing.

Super Boys: The Amazing Adventures of Jerry Siegel and Joe Shuster—the Creators of Superman by Brad Ricca, PhD, SAGES fellow (Ballantine Books, hardcover, $16.78). Drawing on 10 years of research, Ricca’s book is the first-ever full biography about Superman’s creators, Siegel and Shuster. It reveals the initial stories and pictures published by the two men, where the first Superman story originated, the real inspiration for Lois Lane and the template for Superman’s costume. Superman also tracks their lives after they left Superman, including Siegel’s secret work during World War II and never-before-seen work from Shuster.
“Our university has a long and proud history of leadership in education and technology.”

W.A. “Bud” Baeslack III
University Provost

CWRU Launches Open Online Courses

People around the world can learn from two of Case Western Reserve’s most prominent professors—from anywhere and for free.

This spring, the university launched its first Massive Open Online Courses—or MOOCs—through Coursera, a company that provides a platform for online offerings from 62 institutions, including Duke, Princeton and Stanford universities.

Case Western Reserve’s new non-credit offerings feature the expertise of Michael Scharf, JD, the School of Law’s associate dean for global legal studies; and Richard Boyatzis, PhD, professor of organizational behavior and Distinguished University Professor.

“Our university has a long and proud history of leadership in education and technology,” says Case Western Reserve Provost W.A. “Bud” Baeslack III. “These online academic offerings represent new ways for us to advance learning—not only for those who take the courses, but those who teach them as well.”

Scharf’s eight-week introductory course on international criminal law explores the policy and practice of international crimes and courts. Boyatzis is teaching a six-week class on how tapping into emotional intelligence can help people be better leaders.

The MOOCs accompany other advances in online education at Case Western Reserve. The university launched its first online degree program, a master’s degree in social administration, this year, and Case School of Engineering introduced an online certificate program and master’s degree in wireless health.

3-D Maps Zoom in on Heart Stress

Some 36,000 children are born with a heart defect each year in the United States, according to the American Heart Association. Often, scientists don’t know why.

Now, researchers at Case Western Reserve have created a tool that could help identify the genetic and environmental factors that trigger these abnormalities.

Biomedical engineer Andrew Rollins, PhD, led a team that discovered how to create three-dimensional maps of the stresses placed on a developing heart.

Modifying an imaging technique called Doppler optical coherence tomography (OCT), the researchers created a 3-D image using reflections from an infrared laser, similar to how sonar uses sound waves to detect objects. They’re using the Doppler OCT to map shear stress—the force passing blood cells put on the cells that line a growing heart—which has been linked to changes in gene expression that result in heart defects.

Rollins says alcohol exposure alters shear stress patterns, which in turn influences the signals that play an important role in the development of the heart valves. His team is using the 3-D mapping technology to measure the effects of alcohol and certain mental health drugs on shear stress in an animal model. But eventually, they hope to apply the technique to uncover how alcohol, drugs and other factors trigger birth defects in growing human hearts.

A More Natural Artificial Eye

Case Western Reserve University’s Eric Baer, PhD, and his colleagues have created an artificial lens that mimics a healthy 5-year-old’s eye.

The Gradient Refractive Index lens, or GRIN lens, gradually bends light as it passes through layers of two kinds of polymers, each just nanometers thick. Every one of the polymers has a different refractive index, which means light travels through them at different speeds.

Unlike eyeglasses, the lens can maintain focus across its surface—in practice, to the corners of the eye—and also can focus near and far.

“The efficiency of GRIN lenses and their light weight make them desirable for cameras, telescopes, as well as, eventually, replacement lenses for human eyes,” says Baer, Distinguished University Professor, Herbert Henry Dow Professor of Science and Engineering and director of the university’s Center for Layered Polymer Systems. “GRIN lenses have a basis in biology. They are inspired by fish eyes that can focus light in water.”

Members of the research team include doctoral student Shanzuo Ji, as well as scientists at the Rose-Hulman Institute of Technology in Terre Haute, Ind., and the U.S. Naval Research Laboratory in Washington, D.C. Also collaborating was alumnus Michael Ponting, PhD (GRS ’10), who co-founded the company Polymer Plus in Valley View, Ohio, based on the layering technologies developed at Baer’s center.

CWRU Launches Open Online Courses

People around the world can learn from two of Case Western Reserve’s most prominent professors—from anywhere and for free.

This spring, the university launched its first Massive Open Online Courses—or MOOCs—through Coursera, a company that provides a platform for online offerings from 62 institutions, including Duke, Princeton and Stanford universities.

Case Western Reserve’s new non-credit offerings feature the expertise of Michael Scharf, JD, the School of Law’s associate dean for global legal studies; and Richard Boyatzis, PhD, professor of organizational behavior and Distinguished University Professor.

“Our university has a long and proud history of leadership in education and technology,” says Case Western Reserve Provost W.A. “Bud” Baeslack III. “These online academic offerings represent new ways for us to advance learning—not only for those who take the courses, but those who teach them as well.”

Scharf’s eight-week introductory course on international criminal law explores the policy and practice of international crimes and courts. Boyatzis is teaching a six-week class on how tapping into emotional intelligence can help people be better leaders.

The MOOCs accompany other advances in online education at Case Western Reserve. The university launched its first online degree program, a master’s degree in social administration, this year, and Case School of Engineering introduced an online certificate program and master’s degree in wireless health.

3-D Maps Zoom in on Heart Stress

Some 36,000 children are born with a heart defect each year in the United States, according to the American Heart Association. Often, scientists don’t know why.

Now, researchers at Case Western Reserve have created a tool that could help identify the genetic and environmental factors that trigger these abnormalities.

Biomedical engineer Andrew Rollins, PhD, led a team that discovered how to create three-dimensional maps of the stresses placed on a developing heart.

Modifying an imaging technique called Doppler optical coherence tomography (OCT), the researchers created a 3-D image using reflections from an infrared laser, similar to how sonar uses sound waves to detect objects. They’re using the Doppler OCT to map shear stress—the force passing blood cells put on the cells that line a growing heart—which has been linked to changes in gene expression that result in heart defects.

Rollins says alcohol exposure alters shear stress patterns, which in turn influences the signals that play an important role in the development of the heart valves. His team is using the 3-D mapping technology to measure the effects of alcohol and certain mental health drugs on shear stress in an animal model. But eventually, they hope to apply the technique to uncover how alcohol, drugs and other factors trigger birth defects in growing human hearts.

A More Natural Artificial Eye

Case Western Reserve University’s Eric Baer, PhD, and his colleagues have created an artificial lens that mimics a healthy 5-year-old’s eye.

The Gradient Refractive Index lens, or GRIN lens, gradually bends light as it passes through layers of two kinds of polymers, each just nanometers thick. Every one of the polymers has a different refractive index, which means light travels through them at different speeds.

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Digital Visits Relieve Real-World Symptoms

Practice visits with health care avatars could help young people overcome depression symptoms, according to new research from Case Western Reserve’s Frances Payne Bolton School of Nursing.

Many young adults with depression just don’t know how to ask for help, according to nursing researcher Melissa D. Pinto, PhD, RN. But her study shows that interacting with on-screen avatars—computerized models of health care providers—helps them overcome barriers to seeking treatment and reduces their depressive symptoms.

Pinto, an instructor at the nursing school, used an avatar-based program to help 18- to 25-year-old study participants through a visit to a primary care provider’s office. As they interacted with on-screen avatars, “they didn’t just learn strategies and communication skills, they were rehearsing for a real visit, too,” Pinto explains.

Over the three-month study, young adults who worked with the avatar reported a significant reduction in depressive symptoms, while the group that only received screen-based information saw no significant change.

Pinto also is part of the K2 Training Program, an initiative of the Clinical and Translational Science Collaborative at the School of Medicine, funded through a $64 million grant from the National Institutes of Health in 2007 and renewed last year with a $64.6 million award. The study also received funding through a Midwest Nursing Research Society/Army Nurses Foundation Grant.

Individualized and small-group instruction helped shorten the learning curve, McCallum says.

As those in the 12-week study became more comfortable with the tablets, they not only were more socially and productively engaged with family and friends, but they also reported higher levels of self-esteem and life satisfaction than members of a control group who received no training. The face-to-face instruction also boosted the participants’ confidence in going online on their own.

The study participants reported upward-trending changes in optimism and problem-solving ability, too.

“These trends weren’t just tied to their tablet use,” McCallum says. “They were changes in their total outlook.”

Tablet-Savvy Seniors Report Better Moods

Spending more time in the digital world could help older adults lead happier lives in the real one, according to Case Western Reserve University psychologist T. J. McCallum, PhD.

McCallum, an associate professor of psychology, hypothesized that high-tech training on computer tablets would lead to more and broader social engagement for seniors—a key sign of aging well.

McCallum says.

The young app creators envision a future where people use BIY to save electricity on the go.

CWRU Students Power Up Energy-Tracking App

Homeowners can enhance household budgets while reducing environmental impact, thanks to an electricity-tracking app developed by Case Western Reserve University students Robert Karam and Bryan Marty.

Karam, whose partner Marty, 23, built the database and website where users can get the app, Marty, a Wooster, Ohio, native, plans to graduate in 2014 with a bachelor’s degree in computer engineering and a master’s degree in computer science.

The project took second place in the student division of the U.S. Department of Energy’s “Apps for Energy” challenge, earning the team an invite to Washington, D.C., in October to show their product to then-Energy Secretary Steven Chu as well as industry and environmental officials.

Still, the young app creators envision a future where people use BIY to save electricity on the go.

“Just like you make a budget for your money,” he says, “you’ll be making an energy budget,” he says.—DOUGLAS S. GUTH
THINK or FEEL? Can’t We Do Both?

Thinking and feeling. Logic and emotion. These states of mind are thought to exist at opposite ends of the spectrum, a notion that a Case Western Reserve University scientist says is no accident.

A recent study by Anthony Jack, PhD, assistant professor of cognitive science, philosophy and psychology, found that our abilities to empathize and to analyze branch off the neural tree in two different directions. Put simply, when we fire up the empathetic portion of our brain, we automatically suppress the analytical side, and vice versa.

This dichotomy can have real effects on human health and well-being. Jack compares the phenomenon to a seesaw: If one side doesn’t go down when the other goes up, it could contribute to mental disorders including dementia and schizophrenia.

“Switching from one network to another is important to maintaining a healthy balance,” says Jack.

This challenge also is a matter of simple human interaction. For example, doctors are trained to think of their patients as complex biological machines that need fixing, which may cause their bedside manner to suffer.

“If you think about people as objects, it gets harder to relate to their experience,” Jack says. “It makes you suppress empathetic thinking.”

Jack’s study took functional magnetic resonance imaging (fMRI) scans of college students presented with questions involving social issues or physics. These tasks caused the seesaw of mental activity to be pushed to different extremes, depending on the type of question.

“We showed that getting inside someone else’s head turned off the part of your brain that thinks about mechanical things,” Jack says.

While we cannot be fully empathetic and analytic at the same time, blended modes of thought borrow from each side, such as creative and Machiavellian thinking. Maintaining a balance also may be key to aging more successfully. Studies suggest that people who switch off the empathetic portions of their brains are more susceptible to dementia.

His findings have garnered attention outside academia. Jack discussed his research with executives from Google and global design company IDEO at February’s Wisdom 2.0 conference.—DG

Microscopic foot hairs keep geckos on their toes, to the point where the small lizard can hang on a sheer surface using just one digit. Case Western Reserve University researcher Shihao Hu, PhD, is part of a project looking to replicate properties of those sticky gecko toes to create a stronger, highly reusable adhesive.

As a graduate student at the University of Akron, Hu and colleagues discovered how microscopic foot hairs called setae helped the lizards scale walls and other surfaces. The mechanics of the geckos’ stride, which involved the animals hyperextending their toes, kept the tiny hairs clean, allowing the footpads to retain their adhesiveness.

“Self-cleaning properties let the gecko stick to surfaces with everyday contaminants and debris,” says Hu, now a postdoctoral macromolecular science and engineering researcher at Case Western Reserve.

Microscopic foot hair is split into hundreds of even tinier nanbranches. This gives gecko footpads numerous real contact points that collectively generate a formidable force when the creatures flatten their feet and place them onto a surface. Humans don’t have those special hair structures, hence less contact points—and no ability to clamber up walls like Spider-Man.

Even so, Hu’s research has multiple practical applications. He is developing gecko-inspired carbon nanotubes, a strong material that could function as an adhesive in the extreme conditions of outer space.

“It can be used as a glue and won’t leave residue,” says Hu. “You can stick it on a surface then peel it off numerous times.” —DG
The clock starts ticking seconds after a traumatic injury. Medics often refer to the first 60 minutes as the “golden hour”—the window of time during which the chances of survival are highest if prompt treatment arrives.

New research from Case Western Reserve University School of Medicine shows that adding specially designed nanoparticles to blood platelets nearly doubles the survival rate within that crucial first hour.

“We knew an injection of these nanoparticles stopped bleeding faster, but now we know the bleeding stopped in time to increase survival following trauma,” says Erin Lavik, ScD, Elmer Lincoln Lindseth Associate Professor in Biomedical Engineering.

Traumatic injuries easily overwhelm the body’s natural clotting process. Lavik and her team have been developing synthetic, injectable platelets that first responders and battlefield medics could use to help the body’s own cells slow or halt internal bleeding until a patient reaches a hospital.

The biodegradable polymer nanoparticles are designed to zero in on injuries and stick to the natural platelets, forming clots faster. Logistic models injected with the nanoparticles demonstrated a one-hour survival rate of 80 percent. The rate dropped to 67 percent in the control group.

Researchers are continuing to test the platelets, working toward the best design and dosage for humans.—JF

Exploring SPACE

Undergraduates at Case Western Reserve will work on high-tech projects motivated by NASA and the aerospace industry, thanks to a new partnership with the space agency and Massachusetts–based software-maker PTC.

The university is the nation’s second higher education institution to participate in NASA’s SPACE, the Strategic Partnerships for the Advancement of Collaborative Engineering, program. Its chief goal is to train new generations of engineers and scientists by giving students the opportunity to work on real-world challenges in aeronautics and other fields.

As part of the initiative, PTE donated its Windchill software for Product Lifecycle Management requirements and PTE Creo® software for Computer Assisted Design, along with hardware servers. These enable students to collaborate on the design, testing and simulation of new products.

The undergraduates will work on aerospace-related projects, such as designing cost-effective human missions to explore asteroids and satellites that measure orbital decay, as well as projects that are connected to manufacturing in aerospace and other products.

“Students who get involved with meaningful projects and these kinds of software tools earlier in their education are the people who will create, manufacture and get to market the next generation of products,” says Michael Grieves (MGT ’00), Product Lifecycle Management pioneer and independent consultant to NASA, who helped arrange PTC’s donation and creation of the SPACE programs at Case Western Reserve.—JF

LACK OF SLEEP

Linked to Breast Cancer

Not getting enough sleep at night could put you at risk for more than nodding off at your desk. According to research from the Case Comprehensive Cancer Center at Case Western Reserve University and University Hospitals Case Medical Center’s Seidman Cancer Center, regularly missing out on sleep could raise the risk of aggressive forms of breast cancer.

Cancer researcher Cheryl Thompson, PhD, says the study is the first of its kind to demonstrate a relationship between lack of sleep and aggressive tumors. Researchers surveyed more than 400 breast cancer patients and compared their sleep habits over two years with their Oncotype DX scores, a test that predicts the likelihood of cancer recurrence.

They found women who slept fewer than six hours per night had higher Oncotype DX scores—and a greater risk their cancer would return.

“Short sleep duration is a public health hazard leading not only to obesity, diabetes and heart disease, but also cancer,” says Li Li, MD, PhD, a cancer researcher and family physician who co-authored the study with Thompson.

More research is needed to understand what causes the association, but Li says helping patients address sleep issues could prove an underappreciated avenue for reducing the risk of more aggressive forms of breast cancer.—JF

NANOPARTICLES Boost Survival Rates

Physics professor Glenn Starkman, PhD, and colleagues from two institutes have devised a technique to use the light emitted by quasars—quasi-stellar radio sources—as a yardstick to measure how the universe has grown.

Not stars but rather black holes glowing as they swallow their surroundings, quasars are some of the brightest and most distant objects in the universe. Starkman’s technique, when combined with the expected discovery of millions more faraway quasars over the next decade, could yield an unprecedented look back to a time shortly after the Big Bang.

The findings were published last year in Physical Review Letters. In a study of 14 quasars, researchers found patterns of light variation over time were consistent from one quasar to another when corrected for what’s known as the quasar’s redshift. The redshift occurs because as the universe expands, it carries the quasars away from us, shifting quasar light toward the red end of the spectrum.

By tuning this process around, researchers could compare the light variations they observed and the standard rate at which the light from quasars sampled actually vary. That information allowed them to infer the redshift of the quasar.

Knowing the quasar redshift enables the scientists to calculate the relative size of the universe when the light was emitted. If the technique proves true, the most distant quasars emitted the light we see now back when the universe was one-eighth the size it is today. Older, more distant quasars that are expected to be discovered with new telescopes could provide looks farther into the past.—JF

INTERSTELLAR Mile Markers

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Emmy Award-winning brothers (who got their start at Case Western Reserve) talk show business and superheroes.

BY LAURA PUTRE

BETORE the U.S. military transformed him into a fighting machine, Captain America was just a puny kid. Brothers Joe (GRS ’97) and Anthony Russo, directors of Captain America 2: The Winter Soldier, have a similar scrawny-to-bravery story.

While at Case Western Reserve—where Joe was a theater major and Anthony attended the law school—they received an education in film at the Cleveland Cinematheque. Inspired by director Robert Rodriguez’s 1995 book How to Make a Film for $7,000, they maxed out their credit cards and cast and cost their buddies in their first film, Pieces. The film caught the attention of filmmaker Steven Soderbergh and actor-producer George Clooney, who offered to work with the duo on their next effort, Welcome to Collinwood.

Known for their guerrilla style of filmmaking, with quick cuts and in-your-face angles, the Russo brothers have received wide recognition for their work on TV comedies (for which they received an Emmy for Outstanding Directing for a Comedy Series) and Community, Arrested Development (for which they were leapfrogging and running from one set to the next. The last day of shooting, we had six sets built on a soundstage, and we went to the next. The last day of shooting, we had six sets built on a soundstage, and we went

We showed him the first cut. I think he said, “Trick everything out of it you can.” It was great advice because we ended up with a 72-minute cut of the movie, and it was the best cut. That was the one that Soderbergh saw and fell in love with.

What was it like being discovered overnight? Suddenly you’re directing Welcome to Collinwood and working with George Clooney.

Louis Giannetti (now professor emeritus of film studies) at Case Western Reserve gave that show that energy and feel. We got involved with that show at the pilot stage. It was basically the same process that you go through as a director for a feature film. You come to the table and there’s nothing but a script. You spend time refining and developing the script. And then you move to directing issues: What style are you going to build things from the ground up.

How much creative control did you have with Arrested? Did a lot of improvising happen on the set?

What was your budget for Pieces?

ARKHANS: It was supposed to be $7,000. I don’t think it finished at $7,000. It was probably closer to $10,000.

ARKHANS: That must have been rough on your credit cards.

ARKHANS: We had to pay it off on top of our student loans. I think it took us seven years. Thank God that movie panned out, or we would have been in a lot of trouble.

ARKHANS: When we finished shooting, we couldn’t actually develop the film because we had run out of money. It just sat for like six months until we made enough money to develop it.

ARKHANS: What was your budget for Pieces?

ARKHANS: We got a phone call that the folks at Marvel were fans of Community and they wanted to know if we wanted to meet on Captain America 2. Of course we jumped at the chance.

What is it like going from shooting Community, a TV show that’s 30 self-contained minutes of comic intensity, to a huge film like Captain America?

ARKHANS: TV’s so rigorous and the schedule’s so fast. The volume of work you do in eight months is significant. Especially with a show like Community where you’re switching genres every week.

ARKHANS: The nice thing about coming to work on a movie like Captain America is that Marvel is a very efficient machine. They’ve made a lot of these films so they have all of the top people in place. It makes your life easier to come into the project with a lot of experienced people.

ARKHANS: The schedule’s the same—you’re still dealing with the script, with actors. And you catch up on the special effects pretty quickly because you spend all day talking about them and going through the storyboards.

ARKHANS: It’s actually been a very comfortable experience. It’s probably been the newest experience we’ve had in the business so far.

ARKHANS: Did Captain America fall into your laps, or did you actively campaign to get it?

ARKHANS: We had the most fun in our careers on Captain America 2: The Winter Soldier. We didn’t understand the difference between a $30,000 and a $7.5 million movie. There were all these trucks there, and we were like, “Oh, this is a big problem. What are all these trucks doing here?” Not realizing that they were our trucks.

ARKHANS: How are you going to shoot it? You’re really building things from the ground up.

ARKHANS: As you’re shooting, you’re changing the script, with actors. And you catch up on the special effects pretty quickly because you spend all day talking about them and going through the storyboards.

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Forbes magazine recently recognized four of Case Western Reserve's own for their achievements in science and health care. What can their stories teach institutions about helping women scientists thrive and closing the STEM gender gap?

BY SARAH STANKOBB

PAIGE CRAMER
One is a medical student whose research is changing how the United Nations distributes nutrition to malnourished children in Africa. Another helped design a less-invasive approach to heart imaging. There’s the PhD whose research team zeroed in on a potential answer for Alzheimer’s, and the entrepreneur who launched the nation’s first incubator for digital health startups.

Like light refracted through a prism, all four—Cindy Chang, Christine Fleming, Paige Cramer and Halle Tecco—followed divergent paths and passions to Case Western Reserve University. Since graduation, they now find themselves sharing a bright new ray. All are featured in Forbes magazine’s recent “30 under 30” list of the nation’s most innovative young minds in science and health care.

To see four young women make such rapid strides in fields that, until recently, have been largely male is itself noteworthy. To find four of the 30 Forbes “Rising Stars of Science” from the same institution is extraordinary.

“Not only do we have four with ties to the school, but it’s four women, which I think is impressive,” says Caroline Howard, a Forbes senior online editor involved in the “30 under 30” project. “The odds of having four women in a field that’s not known for having women, I do think that’s unusual.”

The Case Western Reserve alumnae’s deft and dynamic stories could serve as blueprints for the university and other institutions looking to encourage more talented women to pursue so-called STEM careers—that is, those in science, technology, engineering and math. Their stories vary, but these four women—all 29 or 30 years old—share much in common. They each demonstrate a personal perseverance and motivation that exceeds intellectual engagement. They are drawn to succeed at high-caliber institutions, in essence, to test and push themselves. And each has been encouraged and inspired by mentors and role models, from family members to educators, every step of the way.

Cramer, PhD, who completed a doctoral degree in neurosciences in 2012, was drawn to the university’s groundbreaking spinal cord research of neurosciences professor Jerry Silver, PhD, after one of her friends from high school in Pensacola, Fla., fell asleep at the wheel, swerved off the road and was injured so badly in the crash that it left her a quadriplegic.

“That was the button,” says Cramer, now an associate principal scientist at the pharmaceutical powerhouse Merck. “It got me thinking, ‘How can we make this better, how can we fix this?’ I thought, ‘If I get accepted I have to go here.’”

As it turned out, Cramer was unable to join the spinal cord lab, but in the process of her studies became intrigued with neurodegeneration. Ultimately, she became involved in Alzheimer’s research, whose progress made international headlines last year.

Fleming, PhD, who earned both master’s and doctoral degrees in biomedical engineering at Case Western Reserve, the university offered an opportunity to work with leading biomedical engineering researcher Andrew Rollins, PhD. Fleming’s interest in the field was partly born of her older brother’s bouts with asthma and her high school research on why her home state of New York reported such high rates of the disease. She still remembers the time someone smoking a cigarette near where her family was eating at a Macy’s department store triggered such an attack that her brother had to be hospitalized.

Now an assistant professor in electrical engineering at Columbia University, Fleming focuses on optical imaging and spectroscopy instruments for cardiology. She already has created an optical probe that captures detailed images of hearts in animals. The device Fleming developed works by shining infrared light on a region of interest and then monitoring the light reflected back, which changes with the presence of oxygen. Fleming’s lab has already used the technology to watch the hearts of animals in real-time as they breathed, allowing for greater precision and clarity in determining the state of the heart’s muscles.

Chang, a fifth-year medical student at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve, changed direction as well—three times.

Chang, who has lived in about 25 cities—growing up in Taiwan, where her parents are from, Japan and the United States—originally studied mechanical engineering. But her interest shifted to biomedical engineering and then medicine.

“My calling now is exactly what I’m doing. I’m an entrepreneur, but I’m helping other entrepreneurs. I love, love, love what I do now.”

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“I realized that I really enjoyed working with things that were living,” says Chang, whose research is leading to more affordable nutritional supplements for children in Malawi, Africa. “Then I realized I really do enjoy working with individuals instead of cells or parts of bodies or parts of machines.”

These four women epitomize the type of revolutionary ideas possible when young minds are nurtured and inspired. They also represent an emerging minority in the science and health care section of Forbes’ “30 under 30.” Of the 30 selected were women—a number keeping with recent workforce statistics. According to the U.S. Department of Commerce, women make up about 40 percent of the physical and life sciences workforce. Yet in computer and math jobs, the largest segment of STEM occupations, women comprise just 27 percent of workers.

Chang, who was traveling in Turkey the day she got the voicemail confirming her acceptance to medical school, remembers mechanical engineering classrooms of 200 students that had just three or four women. She recalls feeling “a subtle sense that, if you were a girl, you...
had to prove yourself to be just as good as the men, if not better.” She also heard stories about other engineering schools with far fewer women’s restrooms than men’s—a physical sign of an institution’s expectations concerning its student population.

Chang, whose father is a surgeon and whose mother is a pharmacologist, has found a more equal balance in medical school. “Those barriers are much more prominent in engineering fields than in medicine and, for that reason, in medical school,” she says. She’s also in good company as a former engineer, estimating about a third of her classmates are making the transition.

Chang’s first career choice—engineering—is the second-largest STEM occupational category, and yet there’s often still a perception that women aren’t engineers.

Fleming, whose grandparents moved to the Bronx from the Caribbean in search of a better life, thinks this perception stems in part from a lack of exposure to engineering to girls. Fleming, a biomedical engineer whose curriculum vitae includes engineering degrees from MIT and CWRU—says, “growing up, I didn’t know the term ‘engineering’... I think it wasn’t until junior year, when you really start to look at colleges, that I actually knew what engineering was or at least what it entailed.”

Part of the battle for budding scientists like Fleming and Chang is finding female role models—being introduced as girls to women scientists so they can begin imagining themselves filling similar roles. Case Western Reserve has introduced programs to facilitate those introductions early in girls’ education. The university’s Women in Science and Engineering Roundtable (WISER) program creates mentorship opportunities for girls and women across all STEM disciplines. Through WISER, 150 Cleveland girls visited the Case Western Reserve campus this school year for introductions to science and engineering. WISER also coordinates mentorship programs in which CWRU undergraduates mentor girls at two local schools, and through which more than 200 undergraduates participate in peer mentoring.

MENTORSHIP MATTERS

In adulthood, that sort of mentorship remains critical. A study at the U.S. Air Force Academy of 9,000 students found that for women with high math-SAT scores, having a female professor in introductory math and science courses increased their likelihood of graduating with a science degree by 26 percent.

Role models can prove vital for women regardless of their field. As a young girl, Tecco made crafts to sell at her father’s office, rented out books from a home “library,” she created and ran a nail salon in her basement until she accidentally spilled nail polish remover on a coffee table and her father shut the business down. But Tecco’s path as a tech entrepreneur was anything but clear as a future survivor—in 2006 while working at Intel. Tecco was running the nonprofit full time by 2008, the year before she began working on her Harvard MBA. Under her leadership, Yoga Bear grew from a few local San Francisco partner studios to a national nonprofit working with more than 190 studios.

“It was a good ‘starter’ experience for me as a social entrepreneur,” Tecco says. “The biggest lesson I learned was to always align your mission with your margin. Social enterprises may not be optimizing for profit, but they do need to be sustainable in order to make an impact.”

Already an entrepreneur, by the time she got to Harvard Business School, though her classes were still filled with men, says Tecco, “I knew the game and I played it.”

“I really didn’t feel like I had the female role models to show me what my life could be,” Tecco says. “When I was there, I never really understood my true potential, and I think a lot of that was that I was different. I was a female in the room and there weren’t a lot of females.”

Tecco doubted she knew the material as well as the men in her classes because the men seemed to answer more questions, more confidently. It wasn’t until she graduated, headed out a week later on a cross-country drive with friends and landed a job as a finance analyst with Intel Corp. in San Francisco that she met thriving women CEOs and gained the confidence to pursue the same path.

Tecco launched her first venture—Yoga Bear, a nonprofit that provides free yoga classes to cancer patients and survivors—in 2006 while working at Intel. Tecco was running the nonprofit full time by 2008, the year before she began working on her Harvard MBA. Under her leadership, Yoga Bear grew from a few local San Francisco partner studios to a national nonprofit working with more than 190 studios.

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“I remember a subtle sense that, if you were a girl, you had to prove yourself to be just as good as the men, if not better.”

CINDY CHANG
Tecco says having President Barbara R. Snyder at the helm of Case Western Reserve marks an important shift at her alma mater.

“\text{I think that’s huge, and a really wonderful thing to have there,}” she says. “\text{Seeing women in leadership roles—running universities, labs or lecture halls—is crucial for any university seeking to model female leadership for its students.} There are other signs that trends are changing. According to the Case School of Engineering’s Associate Dean for Research Claire Rimrott, PhD, throughout the 90’s, the number of women faculty in the engineering school hovered around 5 percent. Now, women make up about 15 percent of engineering professors at the school, and that number is expected to rise as its strategic hiring initiative seeks out talent with an eye toward including more women and underrepresented minorities. Cramer, who comes from a long line of doctors, researchers and scientists (her grandfather, father and brother are radiologists), is observing a similar trend at Merck.

“\text{There seem to be more women taking more leadership roles,}” she says. “\text{And I hope and expect that to maintain and increase.}”

That’s not to say male mentors cannot have a powerful influence over female scientists’ careers. Cramer explains: “\text{I was fortunate enough to join a lab that was very pro-women in science, I was never not given an opportunity.}”

Cramer also notes “\text{there were plenty of female graduate students ahead of me while I was just beginning that} more women with an eye toward including more female students pursuing careers in STEM.”

EMERGING AS LEADERS

It’s one thing to ensure that women can see themselves in STEM careers. It’s a separate challenge to retain them and foster career growth. Tecco notes that she meets plenty of women managers and health care providers at entry- and mid-levels, “\text{but where something happens and goes wrong is in the leadership positions.}”

That said, she adds, “\text{I’m sure that as our faculty does become more diverse, there will be more mentors for female students pursuing careers in STEM.}”

“I one thing I’ve noticed is that women tend to help other women,” she says. \text{So as I’ve moved throughout my career at each place, I’ve had a network of women who were my peers, and we were able to talk with one another and give each other advice and support.} So I guess we used that initial limitation as a way to strengthen and push us forward.”

Even when the ratio of women professors to women students remains imbalanced—as is apt to be the case over the time period when larger populations of women work their way through graduate programs but are not yet faculty themselves—Fleming believes inclusive and sensitive professors can make the difference.

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Emerging as leaders:

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"Simply put," says Tecco, "we wanted to see more female entrepreneurs apply to Rock Health and help support those going through our program. That’s where it started, but it has since grown to a much larger community of women supporting women in health care leadership."

In the end, it benefits everyone to create an environment that allows women—or people with family responsibilities, or ambitious young scientists with time to spare, for that matter—to thrive.

Cramer is effusive about her experience working with her mentors in the neuroscience department at Case Western Reserve. Gary Landreth, PhD, director of Case Western Reserve’s Alzheimer’s Research Laboratory, and Brandy Wilkinson, PhD, a former postdoctoral fellow in Landreth’s lab. She explains that the department isn’t hampered by undue competition, but instead supports what is in the best interest of each student and post-doc. She notes, “Gary makes sure that his students feel like they are working toward something and not for someone.”

She says Landreth encourages students to take risks and also take ownership over their work. It’s about modeling what it is to be a good scientist; gender simply isn’t an issue.

Cramer says the approach is similar to that of Case Western Reserve as a whole. “CWRU produces high-caliber science, regardless of gender, and is becoming increasingly noticed for its endeavors,” she says.

Cramer, Fleming, Chang and Tecco have taken the skills of scientific rigor, curiosity and independent thought learned at Case Western Reserve and other notable institutions and already are achieving remarkable things early in their careers. Forbes identifies them as “rising stars,” predicting even greater accomplishments as they go. Their ascension will continue to offer lessons for this university and others hoping to motivate more promising young women toward STEM careers—women for which they now serve as role models. And therein may lie the key. At the same time that meeting a woman chemist or engineer can help young girls picture themselves in STEM careers, the crop of women beginning to fill those ranks also are rapidly becoming leaders in their respective fields. In rising so early to the top, they are making out territory for women at the pinnacle of research engineering, health care technology and medicine—and thus modeling the future for those who follow.

"CWRU produces high-caliber science, regardless of gender, and is becoming increasingly noticed for its endeavors."

PAIGE CRAMER
When Case Western Reserve’s Michael Weiss, MD, PhD, first began investigating insulin as a resident at the Brigham and Women’s Hospital in Boston in 1985, an adviser at Harvard Medical School tried to warn him off the topic. The adviser suggested that studying a protein whose mysteries already had been solved risked impairing the young scientist’s career. Fortunately, he didn’t listen.

Earlier this year, Weiss and an international team of researchers produced the first 3-D image of the hormone-receptor complex to discover how insulin binds to the surface of cells. Their findings could lead to safer, more effective forms of insulin and possibly eliminate the need for insulin injections, carrying profound implications for diabetes patients.

Uncovering exactly how insulin interacts with cells could point researchers toward new, improved treatments for diabetes and other diseases.

By Alexander Gelfand
States, and researchers believed they had stepped closer to understanding it all. The study was the only medication used to manage something on; in the case of insulin, it tells a son with Type 1 diabetes. Neuringer, PhD, with whom Weiss studied at the atomic level. If not for a supportive mentor, Weiss, who is now Cowan-Blum professor of biochemistry, biomedical engineering and medicine at Case Western Reserve, might never have bothered with diabetes. When Weiss began his research, diabetes was hardly a hot topic. Type 2 diabetes, which is linked to obesity, had yet to emerge as a global epidemic that disproportionately affects underprivileged and minority communities in the United States, and researchers believed they had already determined the structure of insulin at the atomic level. If not for a supportive mentor, Weiss, who is now Cowan-Blum Professor of Cancer Research, chair of the Department of Biochemistry and a professor of biochemistry, biomedical engineering and medicine at Case Western Reserve, might never have bothered with insulin at all. But the late physicist Leo Shoelson, now head of the Section on Pathophysiology and Molecular Pharmacology at the Joslin Diabetes Center in Boston, used a molecular imaging technique called nuclear magnetic resonance (NMR) spectroscopy to study insulin receptors and discovered that a mutant insulin was active even though a portion of the hormone was disordered and detached—findings that didn’t mesh with the established crystal structure of insulin. Weiss and Shoelson’s work—published in Nature in 1991 with coworkers Q.X. Hua, PhD, and M. Kochoyan, PhD—provided evidence that scientists had unknowingly been studying an inactive shape of insulin. A complementary computational method (led by Lawrence) and painstaking biochemical experiments by Weiss and Whitaker. Their efforts not only confirmed some prior hypotheses, but also revealed surprising results. Among other findings, Weiss, Lawrence and their colleagues demonstrated that both the insulin molecule and the extracellular structure. Although the classical crystal structures provide insight into how the hormone is stored in the pancreas, it was a misunderstanding that may have stymied progress in insulin therapy for many years.

That realization sparked a multi-year international project. Key progress was made in the biochemical and structural understanding of the insulin receptor by a team in Melbourne, Australia, led by Colin Ward, PhD, and Michael Lawrence, PhD. The team’s goal was to unlock the mysteries of the active shape the molecule takes when it is released into the bloodstream so it can bind to itself. A fellow resident, Steve Shoelson, had done insulin research at the University of Chicago while working on his own MD and PhD. He introduced Weiss to a network of senior scientists, including Chicago biochemist Donald Steiner, MD, who were trying to get a better handle on the protein’s workings. By 1991, Weiss and Shoelson had made great progress of their own. Key encouragement to their efforts was provided by Eugene Braunwald and Marshall Wolf at the Brigham & Women’s Hospital and by Martin Karplus, who was Weiss’ PhD mentor in the Department of Chemistry at Harvard University.

A NEW APPROACH

Weiss and Shoelson, now head of the Department of Biochemistry at Case Western Reserve School of Medicine, Steiner, Dodson—who died just a few weeks before the recent publication—and others as far afield as the Czech Republic. The new structure reveals an intricate dance between insulin, a small protein made up of two delicately twisting strands of amino acids, and its much larger receptor, “a transmembrane” protein that sits partly outside of a cell and partly inside it. The group combined a refined form of X-ray crystallography with cutting-edge computational methods (led by Lawrence) and painstaking biochemical experiments by Weiss and Whitaker. Their efforts not only confirmed some prior hypotheses, but also revealed surprising results. Among other findings, Weiss, Lawrence and their colleagues demonstrated that both the insulin molecule and the extracellular technique works. But if it’s a new approach, you get nervous.”

MICHAEL WEISS, MD, PHD

something on; in the case of insulin, it tells our cells to absorb sugar (glucose) from our blood for use or storage as energy. Understanding exactly how a hormone attaches to its receptor makes it possible to develop improved versions of the hormone that can be used to treat patients more effectively. Weiss has spent much of the past 25–odd years helping understand the structural basis of how insulin really works. In a paper published in January in the journal Nature, he and his colleagues unveiled the 3-D image, getting them one step closer to understanding it all.
Insulin Therapy is
Tricky Business

Under normal circumstances, our bodies produce only as much insulin as we need, pumping out more of the hormone as our blood sugar rises during a meal and throttling back production as it falls. But people with diabetes who rely on insulin injections cannot match nature’s finesse. No matter how carefully they monitor their blood glucose and adjust their dosages, their hormone can either rise too high, leading to hyperglycemia (which can cause serious complications), or fall too low, leading to hypoglycemia (which can result in coma).

Scientists began tinkering with additives to formulations of animal insulin in the 1930s and 1940s to render its effects more predictable. Their ability to create modified forms of the human hormone rapidly accelerated with the advent of genetic engineering in the 1980s. Today, fast-acting insulin analogs can be administered around mealtimes to handle temporary spikes in blood sugar, as well as long-acting ones to supply a steady background level of the protein. Some people with diabetes also use insulin pumps—cellphone-sized devices that can be worn on a belt or against the skin—to deliver insulin through a catheter, avoiding the need for multiple daily injections by syringe.

Nonetheless, navigating the shoals of hyper- and hypoglycemia remains difficult, even as clinical trials led in part by endocrinologists at Case Western Reserve School of Medicine have proven that maintaining tight control over blood glucose is critical to avoiding long-term complications.

One solution lies in next-generation “smart pumps,” designated as the artificial pancreas, that continuously monitor a patient’s blood glucose and use software algorithms to deliver just the right amount of insulin on demand. For maximum performance, however, these pumps will require much faster-acting insulin analogs than those currently on the market. Analogs that are less temperature-sensitive than ordinary insulin also would be helpful. The original form must be refrigerated and spoils when exposed to extreme heat or cold. Ultra-concentrated forms of both long-acting and short-acting insulin also would help in treating those who require very large doses of the hormone, such as obese Type 2 patients with extremely high insulin resistance. So far, however, neither of these analogs has been commercially available—nor has been commercialized in hopes of improving diabetes treatment. In 2009, he founded a company, Thermolin Diabetes LLC, to commercialize several of these insulin analogs. The Thermolin pipeline includes ultra-concentrated forms of insulin for patients who require especially large doses of the hormone; an ultra-rapid-acting form for use in the insulin pumps employed by some patients; and a heat-stable version of the protein for use both in pumps and in developing parts of the world where the electrical grid is incomplete and refrigerators are rare.

portion of its receptor rearrange themselves upon binding. During that process, the molecule and the receptor change their shapes in subtle ways as they embrace one another at the atomic level. For Weiss, the weeks leading up to the final results were nerve-racking, partly because he’d relied on relatively untested experimental procedures.

“If something’s been done a thousand times,” he says, “then you’re confident the technique works. But if it’s a new approach, you get nervous.”

In the mid-90s, Stavan Hubbard, PhD, professor of biochemistry and molecular pharmacology at New York University, had described the structure of the receptor portion that resides inside the cell. He relates in a Nature article earlier this year that a structure of the outside portion of the receptor had been reported in 2006 by Weiss’ Australian collaborators, but no one had managed to capture an image of the entire receptor—or even a piece of it—with an insulin molecule docked to it. To achieve the unprecedented resolution needed for this picture, the international team had dissected the primary hormone-binding portion of the receptor and relied on some recent advances in crystallographic techniques.

The picture of the interaction remains incomplete. Despite their breakthrough, Weiss and his colleagues still had to settle for a partial view. Yet Hubbard and other leading researchers call the latest results a major leap forward. In fact, Hubbard says the work opens new possibilities for engineering enhanced forms of insulin.

TARGETING BETTER TREATMENTS

For years, Weiss has been using computers to design altered forms of insulin in hopes of improving diabetes treatment. In 2009, he founded a company, Thermolin Diabetes LLC, to commercialize several of these insulin analogs. The Thermolin pipeline includes ultra-concentrated forms of insulin for patients who require especially large doses of the hormone; an ultra-rapid-acting form for use in the insulin pumps employed by some patients; and a heat-stable version of the protein for use both in pumps and in developing parts of the world where the electrical grid is incomplete and refrigerators are rare.

With a new model of insulin and its receptor in hand, Weiss is now working on a paper to explain exactly how his ultra-stable, fast-acting analog works, and he already has begun revisiting its design. In time, he hopes to use the model to develop more and better analogs.

But this latest breakthrough in insulin research has implications that go beyond diabetes. For example, a special form of the insulin receptor is found in the brain. Tony Hollenberg, MD, chief of the Division of Endocrinology, Diabetes and Metabolism at the Harvard-affiliated Beth Deaconess Medical Center in Boston, notes that evidence exists that insulin resistance, the underlying cause of Type 2 diabetes, also contributes to Alzheimer’s and other neurodegenerative disorders. Weiss, who watched his grandmother succumb to dementia, would like to create an insulin analog that would bind better to the receptor in the brain and stave off the illness. In addition, a substance called insulin-like growth factor (IGF) has been linked to certain kinds of cancer. Insulin and IGF are very similar, and their receptors are closely related—so much so that they can swap partners, insulin binding to the IGF receptor, and vice versa. As a result, a better understanding of how insulin binds to its own receptor could offer researchers clues about how to go about finding new cancer treatments.

Weiss considers his work with an international team on a project that benefits society, even as it advances science. Now that a lifetime’s worth of research is finally starting to bear fruit, his mounting optimism is almost palpable. “The next five years,” he says, “are going to be even more exciting than the last five.”

“The next five years are going to be even more exciting than the last five.”

MICHAEL WEISS, MD, PHD

What is Diabetes?

Diabetes is a group of disorders characterized by elevated levels of blood glucose that arise when the body either can’t produce enough insulin or no longer responds to it properly.

Type 1 diabetes accounts for roughly 5 percent of all diagnosed cases of diabetes in adults; Type 2 diabetes accounts for 90 to 95 percent of the remainder. Symptoms of either type of diabetes, when untreated, include fatigue, blurred vision and increased thirst and urination. Serious long-term complications range from increased risk of cardiovascular disease to blindness and kidney failure.

In Type 1 diabetes, the body’s own immune system destroys the pancreatic cells that produce insulin. Once known as “the wasting disease,” prior to the introduction of insulin therapy in the 1920s, the disease was “100 percent fatal,” says George Grunberger, MD, a former researcher in the Diabetes Branch of the National Institutes of Health and founder of the Comprehensive Diabetes Program at Wayne State University.

Type 2 diabetes, which is closely linked to obesity and lack of exercise, results from insulin resistance; although the body continues to produce insulin, its cells no longer respond to the hormone as they should. In the United States, the burden of Type 2 diabetes falls disproportionately within underprivileged communities, including minorities and women. The Department of Health and Human Services reports that African Americans are twice as likely as non-Hispanic whites to be diagnosed with diabetes, and Latinos are 17 times more likely to die from the disease than non-Hispanic white women.

Adverse changes in diet and lifestyle also are spurring an epidemic of Type 2 diabetes in the developing world. The World Health Organization estimates that more than 80 percent of diabetes deaths occur in low- to middle-income countries, and it expects total deaths to rise by more than 50 percent over the next 10 years. While early-stage Type 2 diabetes can be controlled by diet and exercise, about one-third of patients require supplemental insulin.
Welcome to Uptown

Shopping, dining, nightlife—we’ve got it all, and more is on the way. Between dynamic outdoor space, trendy eateries and stylish stores, Uptown is one of Cleveland’s most exciting up-and-coming enclaves, and it’s right in Case Western Reserve’s backyard.

See what’s got this new neighborhood hopping.

BY: JACKIE FITCH — ILLUSTRATIONS BY: KATIE DAUGHERTY — PHOTOS BY: KEVIN KOPANSKI

Great Outdoors
Take a stroll—or sit—and enjoy Toby’s Plaza, outdoor space made possible through a gift from alumna Toby Devan Lewis.

On the Map
Located on Euclid Avenue near Mayfield Road, Uptown is bustling with activity.

Toby’s Plaza

Get Cultured
Check out some modern masterpieces at the Museum of Contemporary Art.

Dine In
Share a meal at Accent, a pan-Asian fusion restaurant from SASA’s Scott Kim.

Sweet Rewards
Get a scoop of some Cleveland flavor at Mitchell’s Ice Cream.

Snack
Enjoy a coffee, lunch or sweet treats from Panera’s bakery.

In Style
Find that perfect piece your wardrobe’s been missing at Anne van H.

Celebrate
Grab a bite to eat or a drink at ABC the Tavern.

Grab and Go
Stop in for a super-fast sub.

Fill Up
Dive in to a burrito or bowl with your favorite fixings.
Connect
Stay in touch—and
up on the latest
gadgets—at
Verizon Wireless.

Barnes & Noble
University
Bookstore

Shop Smart
Browse the latest bestsellers or
knock out your back-to-school
shopping at the university’s
Barnes & Noble bookstore.

In Shape
Find your zen at
Cleveland Yoga.

Energize
Recharge at the
bookstore’s
adjacent Starbucks.

Starbucks

Verizon Wireless

Stock Up
Pick up the essentials
for a great home-cooked
meal or enjoy a ready-
made lunch from
Constantino’s Market.

Constantino’s
Market

Browse the latest bestsellers or
knock out your back-to-school
shopping at the university’s
Barnes & Noble bookstore.

Find your zen at
Cleveland Yoga.
Connect
News from The Alumni Association of Case Western Reserve University

Alumni Profile
AlumBiz: Explorys
Alumni Q&A: Annetta Marion
Class Notes
In Memory

Alumni Q&A
Annetta Marion
(CIT ’88; GRS ’94, Computer Engineering)

[re]discover CWRU
September 26–29, 2013
Save the date for a not-to-be-missed weekend full of spirited social events, smart and interesting THINK Forums and reunion class dinners. With something for everyone, we invite you to visit your alma mater and see what’s new at Case Western Reserve!

Nominations for 2013 Alumni Association Awards, presented during Homecoming, are due July 15. Learn more and submit at case.edu/alumni/awards.

case.edu/homecoming

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Halle Tecco: Accelerating Digital Health

Halle Tecco (MGT ’06), co-founder and CEO of San Francisco’s Rock Health, is passionate about technology, social entrepreneurship and healthy living.

The Solon, Ohio, native followed her two sisters to Case Western Reserve, then took her degree to California for a job with Intel. It was after three years in Silicon Valley that Tecco realized precisely what she wanted to do.

“I went to business school because I loved being in tech, but I wanted to do something in tech and social enterprise—particularly in health care,” she says. “That was exactly what I wrote in my [Harvard] Business School admissions essay.”

While in school at Harvard and looking for summer internships, Tecco found few creative, growth-oriented companies in digital health. She ended up at Apple, where she led the health care section of the App Store.

The pair started pitching the idea for what became Rock Health. She left campus on weeks recruiters visited, so as not to be tempted by lucrative job offers.

“I decided this is what I want to do,” she says. “I didn’t want to work for anyone else. I didn’t want to start my own company. I wanted to start an organization to help entrepreneurs succeed in digital health care.”

Since March 2011, Rock Health has received more than 1,500 applications, and the first class of digital health startups begins in June. Selected startups receive a $100,000 investment and five months of mentorship, legal advice, office space and support from both the Rock Health team and a community of like-minded entrepreneurs.

Rock Health’s first corporate partner was Mayo Clinic. Today that list has grown to include Nike, GE and other major players.

While Tecco doesn’t play favorites, she says CellScope and Wello are big successes from Rock Health’s first four classes.

CellScope develops disease diagnostics that work on mobile devices. One of its products fits over a cellphone camera, turning the camera into an otoscope for diagnosing ear infections at home. Wello offers live, web-based fitness training with a certified personal trainer.

Tecco’s work has drawn national media attention, as well as a host of speaking engagements. To keep things in balance, Tecco, who is also a newlywed, says it is important to take vacation time and put family first.

“Over the past few years, I’ve become really passionate about interior decorating,” she says. “And early-stage, inherently risky investment was generally missing.”

Although she no longer works at Apple, Tecco and a Harvard classmate, Nate Losey, M.D., began brainstorming what it would take to create the Google or Facebook of health care. They spent a year doing research and conducting interviews. Their final report uncovered the problem.

“There wasn’t an ecosystem of innovators and investors coming together in digital health,” she says. “And early-stage, inherently risky investment was generally missing.”

With support from the university’s Career Center and CCF Innovations, the Cleveland Clinic’s technology commercialization arm, the founding partners of Explorys structured a work environment that allows employees to contribute to meaningful change. In a field where room for error is essentially nonexistent, standards are high.

“We listen, we learn, we make adjustments, we don’t pretend that we have all of the answers. We’re pretty smart, but we still listen,” Meil says. “If we make a mistake, we’ll own up to it and fix it.”

This mentality has allowed Explorys to develop a customer-centric reputation. Ongoing team development and communication are other key factors that serve as a strong foundation for a rapidly growing staff.

Explorys is located in its brand-new Carnegie Avenue headquarters, an open workspace that lends itself to a highly collaborative environment. Every morning, the group participates in short, hyper-tactical meetings where issues are solved and the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participates in short, hyper-tactical meetings. Every morning, the group participate...
Annetta Marion: Director and Producer

She’s now a successful director and producer, but Annetta Marion (OT ’81, GS ’16, computer engineering) wasn’t always a creative professional. Though she set her sights on an art school as a teen, Marion’s guidance counselor swayed her to a career in computer engineering after noting her strengths in math and science. At the time, the Case Institute of Technology was one of just two schools offering a computer engineering major. As soon as she visited campus, she says, her decision was made.

Marion grew up in a small western Pennsylvania town with a “very homogenous” population. Coming to CWRU right out of high school allowed her to meet students from all over the world, an experience she says she values. Today, Marion is an award-winning documentary television director and showrunner. She lives and works in New York City as a segment producer on the third season of Oprah’s Master Class, airing on the OWN network. #MasterClass

Q: How did you transition from computer engineering to a career in film and television?
A: My first job was at a startup in western Pennsylvania. I moved to a job in Akron and then on to Yellow Brick Road (now Automation). I liked working as an engineer, but I was surprised by the departmental politics of it. I had an active volunteer life and when I made my first film, I completely fell in love. The film, titled The Erosion of Your Rights, was a pro-choice documentary made in the documentary pro-life Ohio HB 108. I finished my master’s degree in January 1994 and left engineering to a career in film and television. How did you transition from computer professional. Though she set her sights on art school as a teen, Marion’s guidance counselor swayed her to a career in computer engineering after noting her strengths in math and science. At the time, the Case Institute of Technology was one of just two schools offering a computer engineering major. As soon as she visited campus, she says, her decision was made.

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Q: When did you start working on Oprah’s Master Class?
A: I’ve been working on the show for three years or so–since the first season of Master Class. Before that I was primarily working on commercials and feature films. Radical Media, a company that I’d been freelancing with for a long time, called me to work on both Master Class and segment directing. It’s a dream job. It’s really a challenging show to make–hard and rewarding from the get-go. I certainly think being segment director–I love the creative stuff.

Q: Do you have a favorite episode or episode from your work on Master Class?
A: From season two, my favorite is the Jane Fonda episode. Word on the street is that it’s also Oprah’s favorite, which is kind of cool. Jane Fonda was the first episode (where I was the segment director and there were explosions and guns and things like that). I’m definitely an action kind of girl! My favorites from season three are Alicia Keys, which aired March 3, and Lenny Kravitz, which won’t air until later this summer.

Q: What is Oprah like?
A: She is personable, very hard working and very wonderful.

School and degree abbreviations

ADL Adelbert College
ABE School of Architecture
CFE Case Institute of Technology
CLE Cleveland College
CSAS Case School of Applied Science
CUW Undergraduates, 1989 and after
DEN School of Dental Medicine
EDU School of Education
EX Non-degree holder
FSM Film School Cathedral
GSR School of Graduate Studies
LAW School of Law
LYS School of Information and Library Science
MED School of Medicine
MNG School of Management
MNO Master of Nonprofit Organizations
NUR School of Nursing
PHCS School of Pharmacy
SAS School of Applied Social Sciences
WRC Western Reserve College

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To keep busy, we have to know how to reach you. Reconnect with us at case.edu/alumni/update, (800) 866.6280 or alumniinfo@case.edu.

50s
George (Jerry) J. Maciuszko
YS ’53, GS ’62, library science
enjoyed a distinguished career as a library director, scholar, professor, writer, lecturer and advocate of Public culture. In March, his wife of 35 years, Kathleen Lynn Maciuszko (GS ’64, library science), announced the release of his book Poles Apart: The Tragic Fate of Poles During World War II. Born in Warsaw, Poland, Maciuszko served on the front lines during the invasion of Poland by Hitler’s forces in 1939. He spent more than five years as a prisoner of war in German camps. His book documents his story and the stories of other Cleveland Poles. After his death in 2003, at the age of 87, his wife spent the next two years getting his manuscript ready for publication.

Sanford Aeromanon (DEN ’57)
lives in Los Angeles and recently retired after 40 years practicing orthodontics. He graduated from law school in 1991 and has been a legal expert witness in malpractice cases involving orthodontists. He is also an accomplished stained glass artist, and his work has won prizes at several art fairs.

Ron Baumeister (OT ’53), the third Spurtan Club Hall of Fame heritage selection inductee. He was a top singles and doubles tennis player for the Rough Riders during the mid-1950s. Baumeister continued to play competitive tennis after graduation and was named the top-ranked 55 and older singles player in the nation by the Western Tennis Association in both

1960s
George (Jerry) J. Maciuszko (GS ’62, library science) You

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Richard Valentine (DEN ’65, GS ’67, orthodontics) lives with his wife of 42 years, Cheryl. Richard is an avid tennis player and his wife owns her own interior decorating business. He values his CWU education because “It allowed [my family] to live a wonderful life and contribute greatly to the community we’ve lived in.” Their son Ryan R. Valentine (MGT ’95) graduated from Case Western Reserve and lives in Cleveland, as does their daughter, Laura.

John B. Jablonski (MED ’64) received the Goodyear D. Shafer Distinguished Community Service Award. The award recognizes a person who has made a singular contribution to the quality of life in Pennsylvania’s western Crawford County. The Meadville, Pa, resident spent most of his career as a physician with a specialty in internal medicine. Since his retirement from Pioneer Medical Associates in 1998, he has worked with the Meadville Area Free Clinic.

Leonard Goldstein (DEN ’67) is the director of dental education and associate professor of orthodontics at the New York College of Osteopathic Medicine. He has authored more than 50 published articles on temporomandibular joint disorders, pain management, acupuncture, forensic dentistry and expert witnessing. He also is on the editorial advisory board for Practical Pain Management and a fellow of the Academy of General Dentistry, International College of Dentists and the Pierre Fauchard Academy. He lives in Great Neck, N.Y.
James M. Perrin (MED ’68) is a resident-at-large and president of The Academic Council of Pediatrics. He begins his one-year term as AAP’s president in January 2014. Perrin is a primary care pediatrician with a lifetime of outstanding service to pregnancy and newborn children and adolescents, especially those with special health care needs. A professor of pediatrics at Harvard Medical School, Perrin heads the Division of General Pediatrics of the Massachusetts General Hospital (MGH) for Children. He also founded and directed the MGH Center for Child and Adolescent Health Policy.

The $1 million award was established in 1994 in honor of Dr. Alfred Alfred M. Gilman ’68, ’70, ’76
brown

Alfred M. Gilman ’68, ’70, ’76, of the University of North Carolina, Chapel Hill, has been named the 2014 recipient of the Distinguished Alumnus Award from Case Western Reserve University. The award is presented annually to an exceptional alumnus whose professional or personal achievements demonstrate the impact that a Case Western Reserve education has had on their personal and professional lives.

Gilman, who earned his bachelor’s degree in biology and chemistry from Case Western Reserve University in 1968, was selected for this year’s award because of his dedicated and significant contributions to the advancement of science, particularly in the areas of molecular, cellular and chemical biology.

The award was presented to Gilman during a ceremony in January 2014 at the University of North Carolina, Chapel Hill, where he is a Distinguished University Professor in the Department of Pharmacology. During his career, he has received numerous awards and honors, including the 1994 Nobel Prize in Physiology or Medicine for his research on G proteins, which are involved in the signaling of many different hormones and neurotransmitters. He is currently the John Ayer Professor of Pharmacology at the University of North Carolina, Chapel Hill.

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This Zdrojewski (CWR ’96) was one of four Spartan football players in Spartan football history, was inducted into Spartan Club Hall of Fame in April. A native of Willowick, Ohio, Zdrojewski was a two-time First Team All-Mid-American Conference, First Team All-Big Ten, and First Team Academic All-American. Mennekin is the president of the Washington Dental Science Club and has been active in the international oral and facial appearance and fabrication of nanotechnologies for optical sensing, advancements in computerized radiography and visualization.

David Kaelber (MGT ’00; GRS ’94; biomedical engineering) was recently promoted to partner at Seigfried Pefahl & Relations (SPR) in Nashville, Tenn. Most recently, he fulfilled the role of client services and business development, conducts and develops and is involved in plan and medical彈性ure programs. He is an active speaker at conferences with students with a focus on healthcare and science. In 2012, the Nashville Business Journal recognized Zdrojewski as one of Nashville’s top Forty Under Forty. Prior to joining SPR in 2006, he was a vice president at Raytheon Strategic Communications in Boston where he managed the firm’s science, technology and health care practice. He also held positions at the Case Western Reserve University School of Medicine and University Hospitals of Cleveland. The Athens, Ohio native is also active in the Nashville Healthcare Council and is a founding board member of the Sally and Sammy Foundation for Pulmonary Hypertension.org.

2000s

Rehi Bhargava (GRS ’05, biomedical science), professor of immunogenetics and biochemistry at the University of Cambridge, was selected as the recipient of the 2013 Craver Award. In 2006, she became a training specialist for the American Society for Clinical Investigation. In 2009, she received the Rabb-Venable Ophthalmology Research Competition. In addition, the American Academy of Ophthalmology Scholar and is an active member of the American Academy of Ophthalmology and the National Medical Association’s Most Valuable Player. Following his selection from 1991-93. As a forward, he was named one of the best five Case Western Reserve student-athletes to earn Academic All-America honors three times. A Willowick, Ohio, native Fox was the baseball program’s all-time leader with 46 career assists. She also ranks 12th with 1,162 career points and eighth with 113 three-pointers. Of his three Academic All-American seasons, Fox was twice named a first-team honoree. In 1999, he won the Patricia B. Kilpatrick Award and the Hank Critchfield Award as the NCAA’s Defensive Most Valuable Player. Following graduation, Zdrojewski began teaching youth sports and the team competed in triathlons. He is the current director of operations for a Buck 4-Kids franchisor in McKinney, Texas. Zdrojewski and his wife, Eileen, have two daughters, Kaitlyn and Taylor.

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nathan m. schaefer (sas ’09) is the new executive director of the empire state pride agenda (espa), the premier lgbt rights organization for new york state. espa is a political advocacy organization for lesbian, gay, bisexual and transgender (lgbt) rights, including same-sex marriage, which was achieved in new york in 2011. schaefer recently began his career as a policy advocate while interning at the aids task force in cleveland, where he assumed a leadership role in community years. schaefer most recently served as the director of public policy at the gay & lesbian allied services, the nation’s oldest and one of the largest lgbt services and advocacy organizations. he also worked in washington for the aids alliance for children, youth, & families.

james e. armort (mgt ’06) recently was named vice president of mission and ministry for st. john medical center, a cleveland-based hospital that is the sister of sisters of charity health system and university hospitals. armort previously served as vice president of mission integration for the ohio region’s catholic health partners, executive director of catholic charities of Stark County and president and CEO of Golden Age centers of greater cleveland. a former priest, he also served five years as associate pastor of a 6,000-family parish in nashville, ten. armort received a master of divinity degree from mendelsohn seminary at the university of mary of the lake and a bachelor of arts degree in religious studies from the university of dayton.

ben malbasa (law ’01) is the new head football coach at notre dame-cathedral latin high school. prior to joining ndcl, malbasa coached cleveland’s Benedicite Bengals for two seasons, leading them to the division iv playoffs in 2011. he also led bynum catholic into the postseason in 2007 and 2010 and, in 2006, served as a volunteer assistant coach at case western reserve.

andrew samtoy (law ’08), of dworak & bernstein co., lpa, was featured as one of cleveland’s most interesting people in a recent issue of cleveland magazine. samtoy co-founded the international movement known as cash mobs (cash-mobs.com), which has been independently operated businesses responsible for hundreds of events (cash-mobs.com), which has been co-founded the international of

in memory

1930s

llikhan diana harris (fsm ’30, sas ’31) william e. funkey (adl ’32, med ’35) audie shayegh young (fsm ’33, ggs ’34, law ’37) manian callah (adl ’34) rosario contin (adl ’34) david e. smith (law ’34, adl ’38) paul devere hirzmann (adl ’35) helen buloces lavigna (adl ’35) florine boyer (edu ’36) roy g. hanley (adl ’36) george d. hughes (sas ’38) irving s. laderman (adl ’36, adl ’38) robert a. nitchilo (adl ’38) ruth s. davis (fsm ’39) jack robert horanak (adl ’37) robert m. marshall (adl ’37, law ’39) tinklein wilson (edu ’37) robert goldhammer (adl ’38) alyn m. matsui (ggs ’40) louis d. quire (fsm ’38) donald e. smith (adl ’39, law ’42) ela jane watters (fsm ’39, iraf ’41)

cassandre b. kendall (nur ’10) and nicholas a. sauge (cow ’10) were married dec. 28, 2012, in atlanta. the couple met during sophomore year–while making pancakes at the zeta psi house—spend the first three of their relationship studying in kelvin smith library and having dinner dates at fridaycalling, nick’s brother, matt sauge (cow ’10, faw ’11) and mike sauge (cow ’05, ggs ’10, 1984) who both met their wives, heidi schmidt (cow ’07) and staci bishop (sas ’08), at case western reserve. cass and nick are currently married and living in cincinnati. nick will graduate soon from medical school at university of cincinnati, and cass is a pediatric oncology nurse at children’s hospital cincinnati. she is also working on her master’s degree through the francies payne bolton school of nursing’s distance learning program.

commodore perry fcu, a credit union based in oak harbor, ohio, is the recipient of the 2012 credit union times political action trailblazer award. renz was honored for launching a challenge against the national credit union administration over perceived harassment during commodore perry’s 2012 on-site exam, which resulted in decreased danel’s score for the organization, a ruling that classifies a bank’s overall condition.

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launch byte discover dialogue connect voice
The Art of Leadership

BY WILLIAM F. BAKER, PHD

If it weren't for the Cleveland Museum of Art, I would have flunked out of Case Western Reserve, no question.

In my working commuter life, a remote corner of the museum was the only place I could be sure of finding enough peace and quiet to do my homework. But in addition to furnishing my ad-hoc workspace, those paintings actually taught me valuable lessons about life and leadership. I didn't realize this until a series of conversations two years ago led me to co-author Every Leader is an Artist with my friend and fellow Case Western Reserve graduate Michael O'Malley. In the book, Michael and I do our best to give the world a startling idea: Management and leadership aren't just like an art form, they are an art form.

Let me take as an example an artist we all know: Pierre Auguste Renoir, impressionist painter of Paris life in pastels and hazy lines. In May of last year, I went to see the Renoir exhibit at the Frick Collection in New York. Renoir has never been a particular favorite of mine, but I was hoping a first-hand encounter with some of his paintings would change my mind.

It did not. The paintings were nice enough. I was entertained to notice that the plump bourgeois people in Renoir's works were not so different from the plump bourgeois New Yorkers who had come to see them. I dutifully made the rounds, underwhelmed, and left. I thought, "What's the big deal about Renoir?"

It was only when I went home and did some reading that I was impressed. To my surprise, I learned that the initial public response to Renoir's work was not at all like mine. His paintings inspired rage, hatred and mockery from the art-conscious Parisian populace of his time, which puzzled me. How could charming slices of life have elicited rage? Boredom I could see, but rage?

The answer, I discovered, lay in the powerful, true-to-life authenticity of Renoir's scenes, and especially the people in them. Renoir's subjects may have been commonplace, but he depicted them exactly as he saw them. In his own, small, perfectly formed way, Renoir didn't pull any punches. With this, I immediately understood why he was so hated in his own time. The Parisians of the 1880s were as unhappy as anybody else who has ever sat for a portrait that turned out to be accurate. Nobody likes to see themselves as they really are.

Renoir's unpopular style was tough on Paris and probably even tougher on Renoir's career, but it is a blessing for us in the 21st century. Because of Renoir's relentless authenticity, we get a window into Paris as it really was in the late 1800s. If he had painted a Thomas Kinkade version, we wouldn't still be interested more than a century later. We would know we were being lied to.

So it is—Michael and I discovered—with management and leadership. Even when it is unpopular, authenticity must never be sacrificed by any good manager. The relationship between any leader and his or her followers has to be based on trust. And unless we come from an authentic place, that trust never has a good chance at forming.

Authenticity isn't always the easy way forward, but without it, we can never hope to accomplish great things, or make it possible for others to do so. It was no doubt agony to keep painting for an angry public, but I'll bet it wasn't nearly as scary for Renoir as making art that was inauthentic, or not making art at all.

In the end, Renoir outlasted his critics and gave something valuable to the world, which is another great lesson about authenticity. It is about playing the long game and thinking past next quarter's profits or the approval of the people whom chance has thrown in your way.

As Renoir was always working for an audience, so managers and leaders always do their work with an eye toward how it will impact others. Leaders must always be visible and vulnerable. They create shared experiences meant to change how people think and behave. They affect people's lives profoundly, probably more than they realize. For the leader as artist, there is never any other option than to draw from the deepest, most authentic part of yourself. For the artist leader, work is best when it is undertaken as a gift.

After I left Case Western Reserve for a career as a media executive, I felt my life was becoming even more creative than when I was a producer—maximizing people's talents, making complex deals, promoting new ideas and business models. That's one reason Mike and I wrote Every Leader is an Artist. Looking back now on 40 years as a manager, I realize that each day (and it was not nearly as many days as it should have been) that I mustered the courage to be authentic and take risks, the spirit of art was never closer.

Submit your essay to magazine@case.edu.

William F. Baker, PhD (ADL ’66; GRS ’68, ’72, Communication Sciences), is director of the Bernard L. Schwartz Center for Media, Public Policy & Education and Claudio Aquaviva Chair at Fordham University in New York. He is also Distinguished Professor of the Practice of Management in Media & Entertainment at IESE Business School in Barcelona. He will discuss his new book Every Leader is an Artist as part of the Town Hall of Cleveland lecture series on Oct. 7. Visit townhallseries.org for more information.
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