ONWARD

OHSU

NOVEMBER 2016 /// A publication for friends and supporters of Oregon Health & Science University

From Idea *TO IMPACT*

Front cover image by Sunny/Stone/Getty Images

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ONWARD
THE OHSU FOUNDATION MAGAZINE
NOVEMBER 2016

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Welcome to ONWARD

Last fall we publicly launched the ***ONWARD*** campaign with the goal of putting the power of philanthropy behind the biggest ideas and toughest challenges in health care. We are already seeing outsized results. One year later, the campaign is inspiring our community to give generously to bold initiatives, enabling OHSU to make transformative investments in innovative people, places and ideas.

OHSU is breaking ground in every sense of the word. We have started construction on the Gary & Christine Rood Family Pavilion, which will provide a home base for out-of-town patients and their families. This project is moving ahead more quickly because of generous gifts from many donors. We are also making progress on a new research and care facility that will allow the OHSU Casey Eye Institute to move faster toward its goal of eliminating preventable blindness. This is made possible due to generous investments from the Oregon State Elks Association and private philanthropist John S. Wold, among others.

The campaign is making it possible to bring in trailblazing scientist Sadik Esener, Ph.D., to lead the new Center for Early Detection Research at the Knight Cancer Institute. Esener will lead this groundbreaking effort to stop cancer before it starts.

Above all, it has always been remarkable people who drive our success. It is with great sadness that we report on the loss of the visionary dean of the OHSU School of Medicine, Mark Richardson, M.D., M.B.A. Mark was a dear friend, an accomplished leader and an outspoken proponent of the bold ideas driving the ***ONWARD*** campaign. His life and untimely death inspire OHSU to continue driving toward the next big discoveries that will make a healthier world for us all.

Thank you for investing in OHSU. Your enthusiastic support pushes us ever ***ONWARD***.

Joseph E. Robertson, Jr., M.D., M.B.A.
President, OHSU

L. Keith Todd
President, OHSU Foundation


DETRO
3

/// Belinda Beresford and Louis Picker at home with their children Galen, Mikey, Zenzo, Alekha and Braam.

A HEALING HISTORY

Belinda Beresford has witnessed the AIDS crisis from many perspectives: as a South African journalist, as an adoptive mother, and now, as the wife of Louis Picker, M.D., the OHSU scientist who could end the epidemic once and for all. >>>>

by Belinda Beresford

The sobs were coming from the field where the teenage boy had fled for privacy. I was kneeling in some bushes nearby, trying not to hear, trying not to vomit, trying not to pass out in the African summer sun and, for some reason, trying not to cry.

> *"WE HAVE ENDED OTHER EPIDEMICS — POLIO, SCARLET FEVER, WHOOPING COUGH, MEASLES — SAVING MILLIONS OF LIVES. EACH OF THESE SUCCESSES WAS BUILT ON A VACCINE. TO END AIDS, WE NEED A VACCINE."*

I poured a bottle of bleach over my hands, feeling ashamed of myself for doing so because it felt disrespectful to the woman who had just died in her home behind me.

Her death had been a long one — two weeks of starvation and dehydration. I had been reporting on the HIV epidemic in that rural area of Zimbabwe for the last two days but there was nothing we could do. I was traveling with a photographer and a translator from a local aid agency. Our car couldn't make it to the village, and carrying her through the miles of hilly bush would have caused her great pain. And for what? She was dying of AIDS. There was nothing to help her. The nearest hospital only had basic painkillers.

So we sat with her, and her family, cleaning her, trying to moisten her mouth, and bleakly aware that the only thing we could give was human contact to a traumatized family. The dead woman's youngest children cried openly, the eldest ones tried to hide their tears. There was much anger and fear around the house and among the neighbors who stayed away. Later, at the funeral, those neighbors talked elliptically about their own experiences with such deaths.

When her breathing stopped and her face finally became peaceful, I helped wash and wrap her body. It was a way to show respect and sympathy.

When she died, she left behind several children and a dying husband. The fields were barely cultivated, the family was living on charity and scraps the children had managed to grow or find.

That night I went to my hotel and got drunker than I have ever been in my life. I drank to pass out and

IT'S NOT OVER

PEOPLE LIVING WITH AND DYING FROM HIV AND AIDS

IN THE U.S.

1.2 million are living with HIV

650 thousand have died from AIDS*

50 thousand newly infected annually

Less than 1/3 with HIV have their virus under control

GLOBALLY

35 million are living with HIV

30 million have died from AIDS*

2.1 million infected in 2015

1/2 of those who need treatment for HIV are receiving it

* Since the earliest cases were detected in the 1980s.

Sources: Centers for Disease Control and Prevention, Gates Foundation, Joint United Nations Programme on HIV and AIDS, World Health Organization

/// Belinda with a keepsake from South Africa.

forget, but the memories were waiting when I woke.

Days later I went back to Johannesburg and I wrote articles for a British newspaper, *The Guardian,* about the woman's death and the destruction I had seen caused by HIV in rural Zimbabwe. The articles formed part of their Christmas charity appeal, which raised money to assist children and families affected by AIDS in Africa. As a 32-year-old journalist that was all I could do. Or so I thought.

Helping one child

Not long after, in 2001, I was approached by a woman who ran a refuge for HIV-positive women and their children in Johannesburg. I asked about a child I had seen previously while doing a story. "His parents are dead, he needs a home, will you take him?" she asked. I wasn't looking for another child, I had a young son of my own. But here was something else I could do. Help one child, even as I hadn't been able to help the many other children I had seen.

So I took home a small, silent boy named Zenzo. For years his nickname was "Small Boy." He was being cared for by an HIV-positive woman whose own child had already died. She handed him over to me, weeping, because she expected to die soon.

Now, more than a decade later, developments in treatment and in prevention, particularly the incredible development of antiretroviral drugs, have led people to talk excitedly about "the end of AIDS." But at this year's International AIDS Conference in South Africa it became clear that AIDS is far from over. The antiretroviral drugs work but they have to be taken diligently for life. Failure to do so lets the virus come roaring back. We have ended other epidemics — polio, scarlet fever, whooping cough, measles — saving millions of lives. Each of these successes was built on a vaccine. To end AIDS, we need a vaccine.

The oddball vaccine

In 2007, I reported on the start — and failure — of a big HIV vaccine trial in South Africa called the STEP study, organized by Merck & Co. and the HIV Vaccine Trials Network. The fact that the vaccine did not work was a big blow. So I was in a skeptical mood when, in 2008, I went to report on a meeting on HIV vaccines in Cape Town. Among the scientists I interviewed, there was one who stood out. The way he explained the concept >>>>

of his "oddball" vaccine was so elegant that it overwhelmed my skepticism.

> *"IN THE EIGHT YEARS SINCE WE MET, LOUIS' CONCEPT HAS GONE FROM UNUSUAL IDEA TO SUPERSTAR VACCINE CANDIDATE."*

That scientist was Louis Picker.

He told me he was from a town I would never have heard of — Portland, Oregon. "Oh I know Portland," I said. "I've been there. It rained the whole time and I'm never going back." I was wrong. Ten months later I married him. And now I live in Portland with Louis, "Small Boy," and our other children.

In the eight years since we met, Louis' concept has gone from unusual idea to superstar vaccine candidate. Now it is leaving the nursery of "basic science" and is heading into "product development" with all the associated regulatory and manufacturing challenges. (See story on page 10.) Next year it will head into Phase I clinical trials, during which it will be tested for safety in humans.

I'm writing this interrupted occasionally by the no longer small "Small Boy." Zenzo is now a high school senior working on college applications. He's made honor roll every year and is an all-state, Division I college recruit for lacrosse.

Zenzo was lucky: he did not contract HIV because his biological mother had the foresight to use what was then a controversial antiretroviral therapy. A vaccine would give so many millions of other Small Boys and Small Girls a chance. And that chance will be birthed right here in Portland, at OHSU.

/// ***Left:*** Belinda and Zenzo.

A VACCINE THAT STOPS HIV

/// ***Above:*** Louis Picker, M.D., at work alongside stepson Braam at his lab at the OHSU Vaccine and Gene Therapy Institute.

Louis Picker's team at the OHSU Vaccine and Gene Therapy Institute made international headlines in 2013 when they published results in the journal *Nature* showing that their vaccine stopped SIV (the simian version of HIV) in 56 percent of infected monkeys tested. The research showed that the vaccine not only prevented an infection from developing, it also activated an immune response that eliminated the virus from the body completely — as if the infection never occurred. The team is now refining a vaccine that will be ready to test for safety in humans in 2017.

THIS VACCINE IS DIFFERENT

This is not the first HIV vaccine to show promise, but Picker's team believes that it may overcome the problems that have caused others to fail.

Here's why:

- The vaccine uses an altered form of a common herpes virus, called *cytomegalovirus* (CMV) to outwit HIV, which has an uncanny ability to hide from the immune system. The engineered form of CMV enables the body to recognize HIV and destroy it.
- The altered-CMV vaccine arms the immune system against infection and keeps it vigilant for life. This staying power means that the vaccine does not lose its effectiveness over time — unlike many other vaccines — potentially providing lifetime protection in a single dose.
- If the vaccine proves safe and effective, large numbers of people could receive one safe, affordable vaccination with no need for boosters.

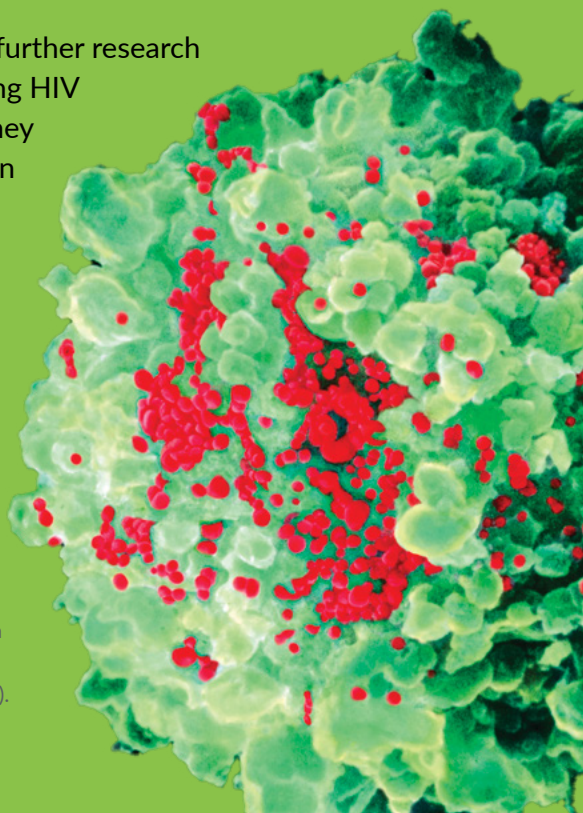
A PATH TO A CURE?

The preventive vaccine discovery has given rise to the hope that, with further research and development, a new form of this vaccine could work to cure existing HIV infections. As Picker's lab continues to refine the preventive vaccine, they are simultaneously pursuing a curative vaccine that would shut down an existing infection.

BEYOND HIV: TB, MALARIA AND HEPATITIS

Over the last 15 years, Picker's lab has broken through many of the most significant barriers to a successful HIV vaccine. And now that work is paying off not only for HIV, but for tuberculosis (TB), malaria, hepatitis and other lethal infections. Everything the team has learned with HIV has accelerated their ability to go after other diseases.

For example, Picker's lab has developed a TB vaccine that is already more effective at protecting rhesus monkeys from infection than the most successful vaccine currently in use around the globe.



/// ***Right:*** Electron micrograph of a T-lymphocyte blood cell (green) infected with HIV (red). NIBSC/Science Photo Library

From *BENCH* to *BEDSIDE*

HOW OHSU TRANSFORMS SCIENTIFIC DISCOVERIES INTO NEW AND BETTER TREATMENTS

As an up-and-coming oncologist and researcher at Harvard's Dana-Farber Cancer Institute, Brian Druker, M.D., waged a relentless search for a treatment that could wipe out cancer without wiping out the patient, too.

He envisioned an alternative to chemotherapy that could stop cancer without side effects by shutting down its underlying genetic cause — something then considered to be impossible. His superiors told him to give up. Instead, he came to OHSU and gave the world Gleevec®, a drug that has saved hundreds of thousands of lives.

OHSU gave Druker (who now directs the OHSU Knight Cancer Institute) what Harvard would not: the time, space and — thanks to donors — financial backing to overcome the many obstacles that stand between a great idea and a viable new treatment. Today at laboratories across OHSU, hundreds of research teams are transforming the treatment of cancer, cardiovascular disease, stroke, HIV infection, brain disorders and other serious conditions. Through private philanthropy, OHSU has found a model for moving exciting new drug discoveries past the "Eureka" moment and toward your medicine cabinet. >>>>

"PHILANTHROPIC SUPPORT HAS NEVER BEEN MORE

IMPORTANT

IN THE SEARCH FOR NEW AND BETTER

LIFE-SAVING TREATMENTS...

...PHILANTHROPY CAN CREATE THE CONDITIONS THAT SCIENTISTS NEED TO

INNOVATE, TAKE RISKS AND AIM HIGHER

THAN THEY OTHERWISE MIGHT. THAT'S WHAT IS SO OFTEN MISSING FROM THE EQUATION WHEN WE RELY SOLELY ON GOVERNMENT FUNDING FOR SCIENCE."

— Daniel M. Dorsa, Ph.D.
senior vice president for research at OHSU

A LONG AND WINDING ROAD

There are hundreds of ideas under study at OHSU at any given time — not only for new drugs and vaccines but also medical devices, diagnostic tools and other inventions for use in clinical care or research. These projects fall along a continuum of scientific effort often called "bench-to-bedside" research, where scientists translate basic discoveries made at the laboratory workbench into new treatments used in the patient-care setting.

Bench-to-bedside research is not a job for the impatient. Scientific dead ends, regulatory red tape and shrinking research budgets threaten success at every turn.

"Philanthropic support has never been more important in the search for new and better life-saving treatments," said Daniel M. Dorsa, Ph.D., senior vice president for research at OHSU. "Discovery of successful drugs and vaccines requires chemistry and tests that are not funded by the National Institutes of Health (NIH). Philanthropy can create the conditions that scientists need to innovate, take risks and aim higher than they otherwise might. That's what is so often missing from the equation when we rely solely on government funding for science."

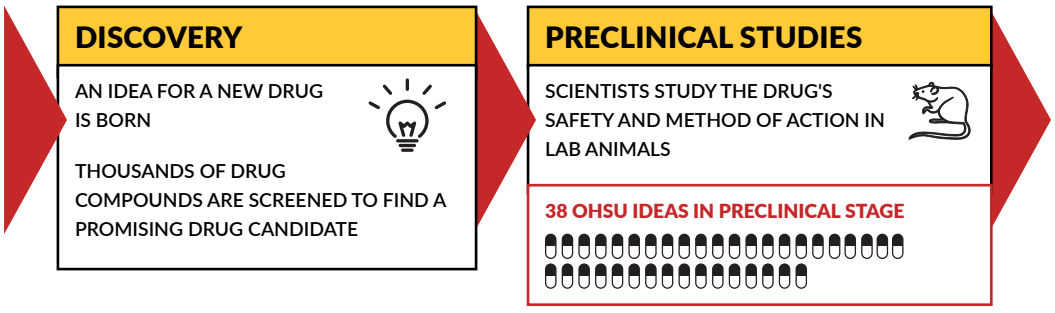
The pharmaceutical research and development process plays out in several stages, as illustrated in the timeline below. It begins with a new revelation about a disease in the basic science laboratory. That nugget of knowledge becomes the focus of a needle-in-a-haystack search through thousands of chemical agents to find ones that might stop or control the disease process. With a promising candidate in hand, scientists test it further in laboratory animals to establish its toxicity, dosage level and method of delivery to patients (pill, injection, etc.). Good results lead to an investigational new drug application with the FDA, the first step of a four-phase process of clinical trials.

THE PERILS OF THE PIPELINE

According to PhRMA, the drug industry trade association, it takes a pharmaceutical company an average of 10 years and $2.6 billion to develop a new drug from start to finish. PhRMA also estimates that at least 90 percent of the drug candidates that enter human clinical trials will fail at some point along the way. It's hardly surprising, then, that most clinical trials are halted in mid-stream — not always because the drug isn't working but often because nervous industry executives act to cut their losses on drugs that appear likely to be unprofitable.

The university's role in this process is changing. In the past, an institution like OHSU would contribute the raw scientific discoveries and then a pharmaceutical company would go on to develop that idea into a finished drug. But as the industry becomes more risk-averse, more life-saving ideas are dying on the vine. Thanks to institutional investment and philanthropic support, OHSU is doing what pharmaceutical companies can't or won't do to fill the innovation void. >>>>

FROM *IDEA* TO *IMPACT*:
HOW NEW TREATMENTS GET TO MARKET



"RIGHT NOW I SPEND **80%** OF MY TIME WRITING GRANTS... **PHILANTHROPY** ALLOWS ME TO SPEND THAT TIME IN THE LAB AND **MAKE PROGRESS *FASTER.*"**

— Louis Picker, M.D.
co-director of the Vaccine
and Gene Therapy Institute

FDA REVIEW + APPROVAL (PHASE IV)

AFTER REVIEWING CLINICAL TRIAL RESULTS, THE FDA MAKES APPROVAL DECISION

ONGOING SAFETY AND EFFICACY IN SEVERAL THOUSAND VOLUNTEERS

- 6 – 10 MONTHS
- $2.6 BILLION
- 8 – 10% SUCCEED THIS FAR

2 OHSU DRUGS RECENTLY APPROVED

HUMAN CLINICAL TRIALS

THE DRUG IS TESTED FOR SAFETY AND EFFECTIVENESS IN HUMAN PATIENTS

14 OHSU IDEAS IN CLINICAL TRIALS

PHASE I

DRUG'S SAFETY FOR HUMAN CONSUMPTION STUDIED IN 20-100 HEALTHY VOLUNTEERS

- 21 MONTHS
- $15.2 MILLION
- 70% SUCCEED THIS FAR

PHASE II

SCIENTISTS MEASURE EFFICACY AND SIDE EFFECTS IN SEVERAL HUNDRED PATIENTS WITH TARGETED DISEASE

- UP TO 2 YRS
- $23.4 MILLION
- 33% SUCCEED THIS FAR

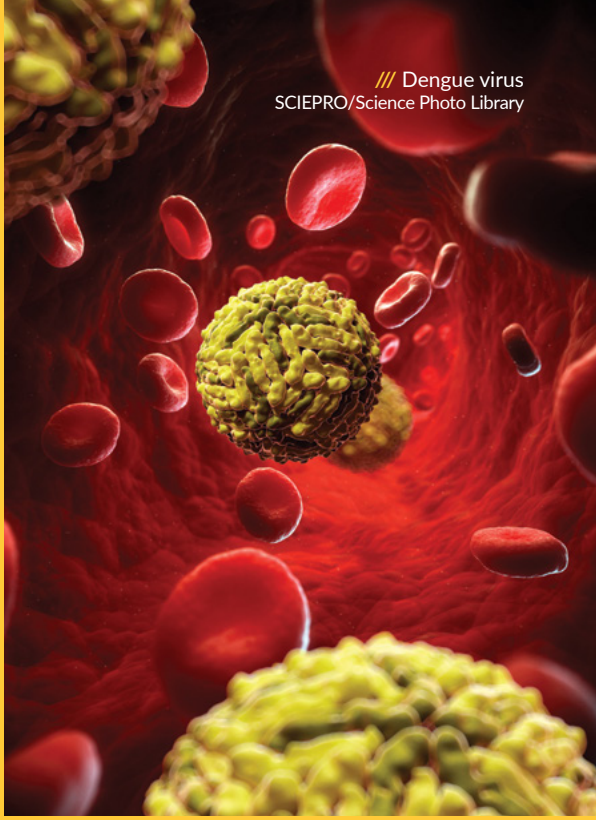
PHASE III

PIVOTAL STUDIES OF 300 TO 3,000 PATIENTS TO REVEAL LONGER-TERM OR RARE SIDE EFFECTS AND MORE DETAILED SAFETY DATA NOT DETECTED EARLIER

- 1 – 4 YRS
- $86 MILLION
- 25-30% SUCCEED THIS FAR

TIME | COST | SUCCESS RATE

OHSU PIPELINE

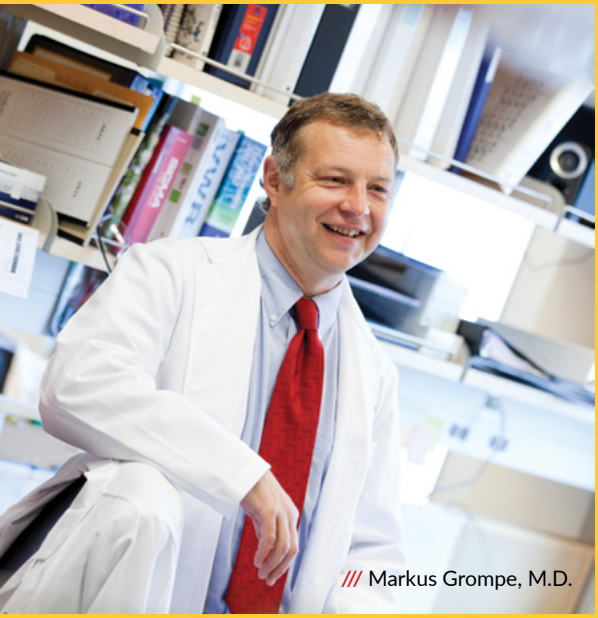


/// Dengue virus
SCIEPRO/Science Photo Library

PRECLINICAL PHASE

DENGUE FEVER BREAKTHROUGH

A team led by William Messer, M.D., Ph.D., assistant professor of medicine and molecular microbiology and immunology, recently published ground-breaking research in *The Proceedings of the National Academy of Science* that represents an enormous stride toward understanding how human antibodies target and neutralize dengue fever virus. Dr. Messer's work opens a new window for vaccine development for not only dengue but a range of other important viruses. An early-career award from the Sunlin and Priscilla Chou Foundation provided the momentum Messer needed to break through. "The Chou's gift allowed me to establish a lab and provided protected time to generate important data and publish the results of my research," Messer says. "These data and publications put me in a much stronger position to compete for long-term sources of funding. Their well-timed generosity was a game-changer."



/// Markus Grompe, M.D.

PRECLINICAL — PHASE I CLINICAL TRIAL

NEW TREATMENTS FOR FANCONI ANEMIA

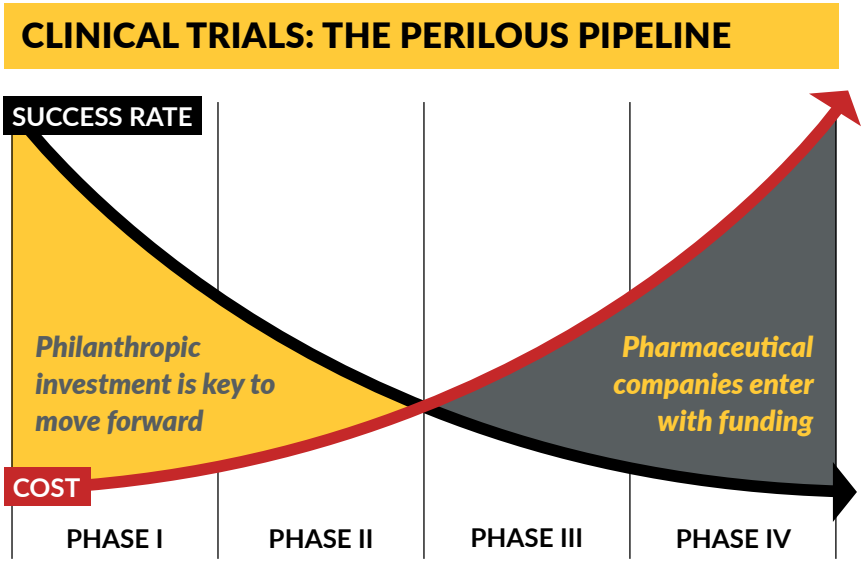
Treatments for Fanconi anemia, a lethal genetic blood disorder, have not improved in 30 years. That could soon change thanks to a $9.9 million project to translate promising FA drug candidates into new FA treatments. Funded by the National Heart, Lung and Blood Institute, the study will be led by OHSU's Markus Grompe, M.D. Grompe's pioneering FA research has earned steady support from the Fanconi Anemia Research Fund, which has awarded more than $1.3 million to him and other OHSU scientists. Gifts from patient-advocacy groups come with a bonus: a heightened sense of urgency that inspires our scientists. "Three decades is too long to wait for new treatments," Grompe says.

ON THE MARKET

FDA-APPROVED OBESITY DRUG

When OHSU licenses its discoveries to private companies, it receives income from licensing that is reinvested in research laboratories or faculty. For donors, that's an additional long-term dividend of investing in bench-to bedside research. Such is the case with Contrave, one of OHSU's recent success stories. Contrave is a weight management drug approved by the FDA in 2014 for overweight and obese adults who also face at least one other serious health challenge related to their weight. The drug was developed by Orexigen, an OHSU start-up company. "The FDA's approval of Contrave represents a significant milestone for both Orexigen and OHSU," says Brendan Rauw, M.B.A., OHSU's vice president of technology transfer and business development, who estimates that a third of the licensing revenue from OHSU drugs is pumped back into research.

Philanthropy is helping OHSU to conduct the expensive studies required to prepare a drug for FDA approval — work that would normally be carried out by private pharmaceutical companies. Support from Helen Jo and William Whitsell, for example, helped OHSU recruit one of the world's foremost chemical biologists, Carsten Schultz, Ph.D., to chair the Department of Physiology and Pharmacology. Bringing this kind of new expertise to campus is a key to creating what OHSU calls a "therapeutic accelerator" — a university-based infrastructure that mirrors a pharmaceutical company's in-house drug development capabilities. An accelerator program brings together teams of specialists who can work the kinks out of drug candidates earlier, making them more viable for licensing to industry partners who will take them to market. It's a new role for universities, and a new role for philanthropists, but it is a powerful way to keep promising ideas flowing through the pipeline.



HOW PHILANTHROPY SPEEDS PROGRESS

As pharmaceutical companies have become more cautious, federal funding has become more scarce. From fiscal year 2003 to 2015, the NIH lost 22 percent of its capacity to fund biomedical research. More and more, philanthropy fill the gaps.

Here's how:

- Endowed faculty chairs and professorships help OHSU retain and recruit top-caliber faculty researchers and empower them to do their most innovative work.
- Private gifts for state-of-the-art scientific equipment and computing tools boost our labs' power and productivity.
- Gifts to OHSU's Bioscience Innovation Fund help the university advance innovative health care technologies and, for some donors, may qualify for an Oregon tax credit through the state's University Venture Development Fund.
- Endowed scholarships help us attract great Ph.D. students who contribute vitally to our research while preparing for future leadership careers.

THE POWER OF THE PIPELINE

OHSU finalized 104 new technology license and option agreements in fiscal year 2016, a 41 percent increase over the prior year. In addition, six new start-up companies based on OHSU discoveries were announced. These business endeavors add vitality to the region's bioscience economy while generating new revenues for OHSU — money that is reinvested in research leading to the next generation of new treatments. Investment in bench-to-bedside research is a powerful catalyst that speeds up the process by which we can bring new and better treatments to patients in Oregon and around the world.

Setting Down Rural Roots

Sky Lakes Medical Center and OHSU have launched an exciting $60 million partnership aimed at transforming rural health care and education. Its impact will be directly felt in Klamath Falls while also benefiting all of Oregon and the practice of rural health care everywhere.

The joint venture will begin with construction of a new collaborative health care facility in Klamath Falls. The 88,000-square-foot building will house the OHSU Campus for Rural Health, provide a home base for OHSU's rural research projects and bring together several Sky Lakes clinics now in separate locations around Klamath Falls.

The partners have formed the Oregon Rural Health Initiative (ORHI), a new, independent organization that will enable both organizations to raise additional charitable support to reach the $60 million goal. Sky Lakes has already invested $27 million in the project, a contribution that includes funds from the estate of the late Richard Wendt, a co-founder of JELD-WEN, Inc. "My father believed in creating change through collaboration," said his son, Rod Wendt. "He would have appreciated that OHSU and Sky Lakes are pulling together to make the biggest impact on rural health."

This effort will build upon investments already made in the region's health care education infrastructure, such as Sky Lakes' rural health care training programs and Oregon Tech's Klamath Falls-based nursing program with OHSU. As the project advances, the partners anticipate strengthening existing programs and developing additional allied health programs together.

OHSU President Joe Robertson, M.D., M.B.A., will serve as ORHI board president; Sky Lakes President and CEO Paul Stewart will serve as the Vice President; JELD-WEN board Vice Chair Rod Wendt will serve as treasurer; OHSU Foundation

President L. Keith Todd will serve as secretary; and John Bell, board chair for Sky Lakes, will serve as an ORHI board member.

The partnership will help OHSU to recruit a nationally recognized health care leader to serve as the dean of rural health, who will direct statewide initiatives from the new headquarters in Klamath Falls. OHSU will contribute $5 million to the project to help sustain programs housed in the building. The remaining $28 million will come from charitable contributions raised through ORHI.

"This partnership allows us to simultaneously address community needs on the ground and build an education and training model with national influence," said Joe Robertson.

About the Campus for Rural Health

OHSU's Campus for Rural Health seeks to create a new kind of health care learning experience, targeted at preparing tomorrow's providers for the unique needs of rural communities. Every student from every OHSU professional school — dentistry, medicine and nursing — will spend time living and studying together in a rural community. Students gain interprofessional experiences in rural settings while also participating in community-based projects. Current sites are located in Klamath Falls and Coos Bay, and OHSU is exploring possibilities for a new site elsewhere in the state. OHSU students will graduate with a clear understanding of the health concerns of rural communities — and the experience will inspire many to set down roots.

A Powerful Place

To be located adjacent to Sky Lakes Medical Center, this first-of-its-kind collaborative facility will improve clinical care, provide an ideal venue for training and ultimately enhance the health of the community. The facility will:

- Establish headquarters for OHSU's Campus for Rural Health, including a dean's suite
- Expand teaching and clinical space for OHSU's Family Practice Residency Program and interprofessional initiative
- Provide an opportunity for students to learn in an innovative rural environment
- Bring 80 percent of Sky Lakes Medical Center's primary care physicians under one roof
- Reduce patient waiting times

/// The building design is close to complete, and should be shovel-ready in the next year.

"This partnership is about closing the urban-rural health care gap. Together, we can make quality health care accessible to more Oregonians — and inspire a new generation of providers to start their practices in rural areas," said Paul Stewart.

The OHSU/Sky Lakes partnership is key to making a transformative, sustainable impact on rural Oregon. By creating a stable workforce trained to collaboratively meet the state's biggest health care challenges, this program will provide Klamath Falls and the state with not only better access to care but also new sources of economic vitality. According to preliminary estimates from the Klamath County Economic Development Association, the new facility and the programs it houses could generate more than $2.4 million annually in economic activity in the region.

With philanthropic and community support, OHSU's education curriculum is evolving to meet the changing needs of the whole state — all 96,000 square miles of it.

She's commonly referred to by her company's slogan: "One tough mother" — and tough she is. She fled from Nazi Germany in 1937, brought her family's company back from the brink of bankruptcy in the 1970s and at the age of 86, foiled a would-be kidnapper.

As chairman of Columbia Sportswear, Gert Boyle is more than tough. She is a sharp, savvy business leader who embraced new materials (Gore-Tex), a more diverse product line, an open ear toward the customer and creative advertising to build the company into the $2 billion-a-year business it is today.

When asked about her success she says, "Early to bed, early to rise, work like hell and advertise," a mantra that guides both her and her company's culture to this day.

Beyond a tough mother, Boyle is also a generous philanthropist. In 2014, she anonymously gave

“Let’s kick cancer’s ***!” — Gert Boyle

$100 million to OHSU, a crucial gift that helped the university meet the $1 billion Knight Cancer Challenge. When her anonymity was spoiled by *Willamette Week*, she decided to come forward — but on her own terms.

In a short video she made with Brian Druker, M.D., director of the Knight Cancer Institute and JELD-WEN chair of leukemia research, Druker asked: “Did you hear about that anonymous $100 million donation to the Knight Cancer Institute?” With the slightest hint of sarcasm, she replied: “Really?! It must have some very wealthy man that did that.” The two exchange a sly smile, clink their lemonade glasses and she exclaims: “Let’s kick cancer’s ***!” (Though the last word is bleeped out.) The video was a hit on social media and was followed by a series of ads in which the pair show off “One tough mother” and “One tough doctor” tattoos.

As is clear from the video, Gert Boyle and Brian Druker have a relationship that goes beyond general acquaintance.

In 2007, Boyle’s son, Tim Boyle, was having breakfast with Druker when he mentioned that his aunt — Gert Boyle’s sister — had also been a scientist at University of California, San Diego (where Druker received his undergraduate degree) and wondered if Druker knew her. Druker asked her name and Tim Boyle replied: “Hildegard Lamfrom.” Druker claims he almost fell out of his chair. “She was my mentor,” he said.

Hildegard Lamfrom, Ph.D., was an influential scientist during one of the 20th century’s most exciting periods of biological discovery. She was an admired colleague and trusted mentor of some of the greatest scientists of her era, including nearly a dozen Nobel laureates. Given the scarcity of women scientists in the 1960s and 1970s, hers was an extraordinary career. Lamfrom passed away of a brain tumor in 1984.

Gert Boyle’s contribution during the challenge was her second major gift made in honor of her sister and Lamfrom’s friendship with Druker. In a 2014 interview with KATU, Boyle said “I can’t think of a better way to leave a legacy behind than to donate to Brian Druker.”

Both sisters blazed new trails for future female leaders. Gert Boyle attributes this in part to having a strict father who encouraged them to “do whatever needed to be done,” an adage she lives by to this day.

At the age of 92, she still comes into the office daily, with no plans of retiring. “I cannot think of anything worse than having to stay home with a bunch of old people,” said Boyle. She oversees much of the PR, and signs about 400 checks a week.

When asked what motivates her, Boyle answered, “You hope that your presence in the world makes a difference.” She added, “At this point in life, the only thing that’s going to help is money. And if I can help with that, so be it. At least I know how to give it away.”

As women ahead of their time, both Boyle and Lamfrom have left a legacy of leadership while helping pave the way to a healthier world for us all.

ONWARD UPDATE

CAMPAIGN DURATION

July 1, 2013 — December 31, 2020

*Total raised, as of October 30, 2016

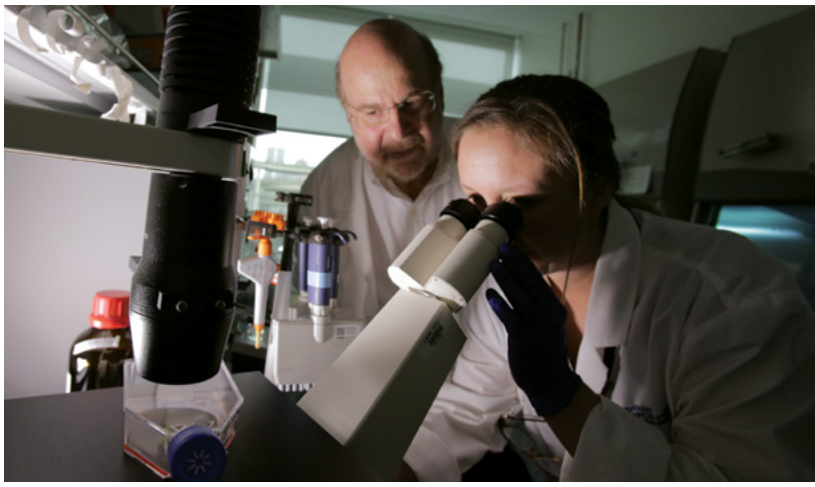
*By contributing to the **ONWARD** campaign, you are supporting people, places and ideas that are transforming lives every day across the state and around the world. Read on for the latest news on select campaign areas.*

TAKING DOWN CANCER /// OHSU KNIGHT CANCER INSTITUTE

GOAL
$1.2 BILLION

Thanks to the momentum provided by the $1 billion Knight Cancer Challenge, the OHSU Knight Cancer Institute has launched the most ambitious early cancer detection research program in the world.

The newly formed Center for Early Detection Research, led by Sadik Esener, Ph.D., will drive new discoveries, devise new cancer tests and treatments and expand clinical trial opportunities. The center is laying the foundation for innovation by recruiting the best cancer research teams in the world, building capacity in areas like computational biology and cancer imaging and creating new research and care facilities on OHSU's South Waterfront campus.



NEWS

During his final State of the Union Address in January, President Barack Obama issued a bold challenge to America: cure cancer. He charged Vice President Joe Biden, who lost his son Beau to cancer, with spearheading the Cancer Moonshot program, a broad initiative that includes the goal of improving early detection strategies.

And now, four OHSU cancer researchers have been chosen to participate in the Cancer Moonshot — both a great honor for our faculty and an exciting way to accelerate the Knight Cancer Institute's early detection vision. The scientists are:

- **Sadik Esener, Ph.D.,** Wendt Family Endowed Chair in Early Cancer Detection and director of the Knight Cancer Institute Center for Early Detection Research
- **Joe Gray, Ph.D.,** Gordon Moore Endowed Chair in the Department of Biomedical Engineering and director of the Center for Spatial Systems Biomedicine
- **Melissa Haendel, Ph.D.,** associate professor in the Department of Medical Informatics and Clinical Epidemiology and director of the Ontology Development Group in the OHSU Library
- **Shannon McWeeney, Ph.D.,** professor and head of the Division of Bioinformatics and Computational Biology in the Department of Medical Informatics and Clinical Epidemiology.

To make a gift, go to OnwardOHSU.org/donation and select Knight Cancer Institute from the pull-down menu.

BEATING HEART DISEASE /// OHSU KNIGHT CARDIOVASCULAR INSTITUTE

GOAL
$100 MILLION

The OHSU Knight Cardiovascular Institute is finding new ways to stop avoidable heart attacks, strokes and other life-threatening cardiovascular catastrophes.

The institute is also making it easier to correct childhood heart defects, dramatically improving quality of life for our youngest patients. As a result, the Knight Cardiovascular Institute is emerging as one of the nation's premier cardiovascular centers, home to groundbreaking research and excellent care for patients from around the region. Philanthropic support enables the Knight Cardiovascular Institute to retain and recruit world-class scientists, develop life-saving treatments, train tomorrow's cardiovascular specialists and invest in bold innovation that saves lives.

NEWS

Maros Ferencik, M.D., Ph.D, from the Knight Cardiovascular Institute and Kim-Hien Dao, D.O., Ph.D., from the Knight Cancer Institute have joined forces on the WEAR clinical trial, a research project focused on developing new early detection and prevention strategies in heart disease, blood cancer and other diseases that cause thousands of deaths per year. The study focuses on women because a special test performed on blood samples requires the presence of two X chromosomes. More than 1,000 women in Oregon have already joined the study to help OHSU researchers create ways to identify those at the highest risk for heart disease and blood cancer.

To make a gift, go to OnwardOHSU.org/donation and select Cardiovascular Research from the pull-down menu.

ENDING BLINDNESS /// OHSU CASEY EYE INSTITUTE

GOAL $50 MILLION

As the region's premier eye care center and research hub, OHSU Casey Eye Institute is determined to eliminate preventable blindness and bring new sight-saving treatments to people around the world.

OHSU is creating a new $50 million facility directly adjacent to the current Casey Eye Institute building that will allow us to treat more patients, expand our world-class research programs and accelerate progress. With philanthropic support we can complete this new research and care facility — and speed the pace of innovation.

NEWS

Right now, the best treatment for patients with a condition called wet age-related macular degeneration is an injection of medication. The injections keep the condition under control, but can be uncomfortable and require a monthly visit to the doctor. Casey Eye Institute researchers are testing a new method of delivering medications — one that would make the process much easier on patients. Casey is one of 50 sites in the U.S. conducting a new clinical trial to test an ocular implant that slowly releases medication into the eye. The device, about half the size of a dime, is implanted as part of an outpatient surgical procedure.

"The study implant is quite elegant," said J. Peter Campbell, M.D., M.P.H., one of the clinical trial's investigators. "Essentially it's a reservoir with a filter at the edge that allows the drug to exit by passive diffusion, allowing for a constant concentrated level in the eye." The device can be refilled in the clinic in a sterile procedure that may be easier and less uncomfortable than a standard injection.

To make a gift, go to OnwardOHSU.org/donation and select Casey Eye Institute from the pull-down menu.

BUILDING A GUEST HOUSE /// THE GARY & CHRISTINE ROOD FAMILY PAVILION

GOAL $32 MILLION

OHSU is building a five-story guest house on Portland's South Waterfront, the Gary & Christine Rood Family Pavilion. With your help, we can create an oasis of peace and healing for our out-of-town patients and families.

"MY FAVORITE WORD IS *HOPE.*" — *McKenna Matteson*

NEWS

McKenna Matteson was just 2 when she was diagnosed with brain cancer. Now 11, with 16 surgeries behind her, she's full of optimism and hope.

Over the years, McKenna and her family have made nearly 100 trips from their home in Eugene to OHSU Doernbecher Children's Hospital. They have been frequent guests at Ronald McDonald House in Portland, so they know that having a safe, supportive place to stay makes a world of difference during a health crisis. To make sure that more families like the Mattesons can count on family housing, OHSU is building the new Gary & Christine Rood Family Pavilion. The new guest house will help thousands of Oregonians every year — providing a place that feels like home, where patients and families can rest, heal and support one another.

McKenna's story is one of hundreds. Visit OnwardOHSU.org/GuestHouse, where you can watch inspiring videos of more families — and make a gift online.

TRANSFORMING BRAIN HEALTH /// NEUROSCIENCES RESEARCH

GOAL
$100 MILLION

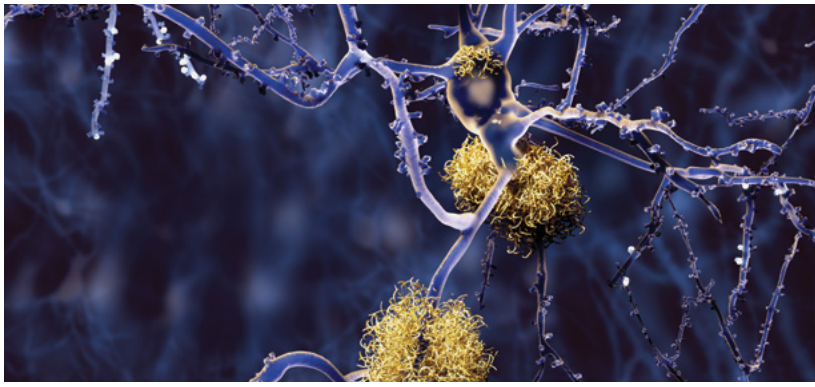
From developmental disorders such as autism to degenerative conditions such as Alzheimer's disease, OHSU neuroscientists are slowly uncovering the secrets of the brain — and creating new hope for patients young and old.

Philanthropy is bringing new world-class faculty and unique capabilities for discovery to OHSU's acclaimed neuroscience program.

NEWS

OHSU has recruited renowned neurobiologist Marc Freeman, Ph.D. to direct the Vollum Institute. Freeman's remarkable career has been fueled by discoveries that fundamentally changed our understanding of the brain: His lab was the first to describe a gene (dSarm/Sarm1) responsible for driving the degeneration of axons — the long nerve fibers that link neurons to one another or to muscle cells — after brain injury. By identifying that gene, Freeman's lab paved the way for the development of potentially life-changing therapies for patients with a wide range of neurodegenerative conditions.

OHSU has appointed leading neuroscientist Bita Moghaddam, Ph.D., as chair of the Department of Behavioral Neuroscience. Her research focuses on the cellular basis of cognitive constructs that are critical to psychiatric disorders, including schizophrenia. When she joins OHSU in January 2017, Dr. Moghaddam will hold the Ruth G. Matarazzo Professorship of Behavioral Neuroscience, an endowed position established by longtime faculty members Drs. Joe and Ruth Matarazzo.



To make a gift, go to OnwardOHSU.org/donation and select Neuroscience Research from the pull-down menu.

STOPPING HIV /// HIV VACCINE RESEARCH

GOAL
$250 MILLION

Over the past 15 years, a team led by Louis Picker, M.D., has developed a unique vaccine that has the potential to put an end to the HIV and AIDS epidemic.

Picker's lab is one of only a handful of teams around the world making real progress, and now his vaccine approach is close to being ready for safety testing in humans. Philanthropic support is helping the team recruit additional scientists, expand its research facilities and move faster toward Phase I clinical trials of this potentially life-saving vaccine.

To make a gift, go to OnwardOHSU.org/donation and select HIV/AIDS Research from the pull-down menu.

NEWS

SEE STORY ON PAGE 4

HEALING KIDS /// OHSU DOERNBECHER CHILDREN'S HOSPITAL

GOAL
$100 MILLION

For more than 90 years, OHSU Doernbecher Children's Hospital has proudly offered the most comprehensive range of pediatric health care services in the region.

That exceptional level of care is one reason why *U.S. News & World Report* has ranked Doernbecher as one of the nation's top children's hospitals seven years in a row. With philanthropic support, we can ensure that all children in Oregon and the region can benefit from the care and research breakthroughs Doernbecher has to offer.

NEWS

After losing their 3-year-old son, Brody, to complications from primary immunodeficiency, Jeff and Tracy Borlaug decided to turn their family's tragic loss into a beacon of hope for those in a similar situation. They created the Brody Borlaug Foundation to fund Oregon's first pediatric immunology program at OHSU. They have raised more than $1 million so far, enabling OHSU to create an endowed professorship called the Brody Borlaug Professorship in Pediatric Immunology. Doernbecher is now actively recruiting a nationally-prominent pediatric immunologist to hold the professorship. Endowed funds are critically important to meeting Doernbecher's goals of recruiting and attracting the most talented doctors — and providing the children of our region with the best possible care.

To make a gift, go to OnwardOHSU.org/donation, and write in Brody Borlaug Professorship.

CLOSING THE RURAL HEALTH GAP /// OREGON RURAL HEALTH INITIATIVE

GOAL
$60 MILLION

With our partner Sky Lakes Medical Center, OHSU has created the Oregon Rural Health Initiative, which will connect every OHSU student to a rural learning opportunity — and ensure that rural Oregonians have access to high-quality health care. Philanthropic support will help us build a new facility in Klamath Falls, recruit a visionary dean of rural health and support rural research and educational programs.

To make a gift, go to OnwardOHSU.org/donation, and write in Rural Health Initiative.

NEWS

SEE STORY ON PAGE 16

Remembering
Mark Richardson

The tragic, untimely passing of our friend and colleague Mark Richardson, M.D., M.B.A., has left the OHSU community heartbroken. Mark, the much-admired dean of the OHSU School of Medicine and an OHSU executive vice president, died Sept. 2, 2016, as a result of accidental injuries suffered three weeks earlier at his home. Mark was universally admired as a man of great integrity, fairness and strength of character.

> *"Mark was a devoted clinician, an inspiring and accomplished leader, a warm, caring and engaging person and a dear, dear friend."*
>
> *— OHSU president Joe Robertson, M.D., M.B.A.*

"Mark was a devoted clinician, an inspiring and accomplished leader, a warm, caring and engaging person and a dear, dear friend," said OHSU President Joe Robertson, M.D., M.B.A.

Mark was appointed dean of the School of Medicine in 2007. Mark was a brilliant leader and an exceptional champion for OHSU philanthropy. He had a knack for distilling even the most complex scientific concepts into understandable terms. His warm and authentic personal style set people at ease. Mark's leadership, and the culture of philanthropy he helped to build among his faculty, played an important role in numerous exceptional gifts to key School of Medicine initiatives.

During his decade-long tenure as dean, OHSU raised more than $2 billion in philanthropic support. A big number like that is certainly something to cheer about, but what matters more is the impact on health. Mark used philanthropy to build OHSU's capacity to train health professionals, retain and recruit the nation's best and brightest faculty, improve access to health care across Oregon, offer advanced treatments available nowhere else in the region and extend the boundaries of human knowledge. Mark's work will continue to touch lives in Oregon and beyond.

To honor him, the OHSU Foundation has established the Mark Richardson, M.D., Dean's Endowment for Excellence. Memorial gifts to this fund will help to advance the highest priorities for the School of Medicine's future. To make a gift, go to OnwardOHSU.org/donation and select Deanship Endowment from the pull-down menu.

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