ONWARD

OHSU

MARCH 2017 /// A publication for friends and supporters of Oregon Health & Science University

WHO'S NEXT?

Meet OHSU's Up-and-Comers

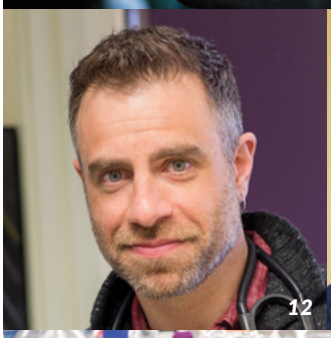
On the cover: Julie Graff, M.D., leads research that has provided first-ever evidence that immunotherapy can slow prostate cancer.

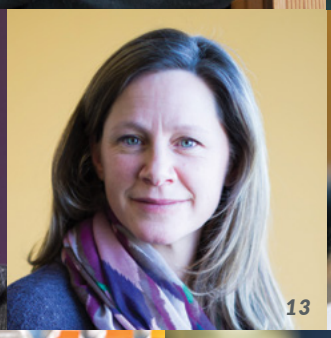
Contents

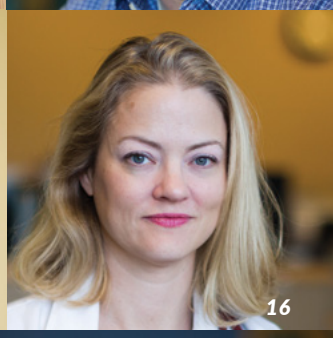
ONWARD
THE OHSU FOUNDATION MAGAZINE
MARCH 2017

Editor: Susie Frank
Designer: Erin Putnam
Contributor: Sarah Jenks
Photos: Fritz Liedtke (cover and pages 6, 7, 13, 16 and 17)
John Valls (pages 5, 8, 9, 10, 12 and 14)

Send questions and comments to:
Susie Frank
franksu@ohsu.edu
OHSU Foundation
1121 SW Salmon Street, Suite 100
Portland, OR 97205







Welcome to **ONWARD**

This edition of ***ONWARD*** magazine puts a spotlight on people you likely haven't heard of — yet. They are just starting school, establishing their first scientific lab or discovering what kind of caregiver they want to be. The 11 people profiled are only a small sampling of the thousands of up-and-comers working and thriving at OHSU. Their tremendous compassion for those they serve and optimism about the future of health care is truly humbling.

At a time when federal research dollars are dwindling, the costs of health care education are growing and universities must increasingly compete for talented faculty and students, your philanthropic support is crucial. It is helping to make OHSU a beacon that attracts exceptional people from all over the world. Thank you for helping to sustain a new generation of leaders as they build their careers and create a healthier world for us all.

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

$1.48 BILLION RAISED TOWARD $2 BILLION GOAL*

CAMPAIGN UPDATE

CAMPAIGN DURATION
JULY 1, 2013 — DECEMBER 31, 2020

NUMBER OF GIFTS
MORE THAN 90,000

Several key campaign areas received a significant boost in the last few months, with major philanthropic investments from a range of individuals and organizations. These are but a few of the significant gifts we have received:

OHSU forged a $27 million philanthropic partnership with **Sky Lakes Medical Center** and the **estate of the late Richard Wendt** to support OHSU's new rural health campus in Klamath Falls.

Norman and Linda Brenden donated $15 million to benefit the Brenden-Colson Center for Pancreatic Care at OHSU, which is discovering new ways to detect and treat pancreatic cancer.

Credit Unions for Kids made a $5 million commitment to support OHSU's new guest house, the Gary & Christine Rood Family Pavilion.

Martha Helikson designated $6 million to support an endowment for brain cancer research.

The October **Doernbecher Freestyle** auction raised more than $1 million for OHSU Doernbecher Children's Hospital. The partnership between Doernbecher and **Nike**, now in its 14th year, has raised nearly $17 million in total for the hospital.

*Total raised as of January 24, 2017

Who's Next?

MEET OHSU'S UP-AND-COMERS

Behind every nationally ranked program and world-famous scientist at OHSU, there are dozens of emerging leaders and role models who will shape the future of health care. They hail from Ethiopia and Tigard and everywhere in between. What brought them here? What drives them? What keeps them hopeful? Meet OHSU's up-and-comers — a new generation of talented, compassionate and determined people who are taking OHSU *ONWARD*. For more photos and longer stories, visit Onward.OHSU.org/UpandComers

"SCIENCE REQUIRES PATIENCE BUT EVERY EXPERIMENT TEACHES US SOMETHING. THERE ARE MANY SMALL EXCITEMENTS ALONG THE WAY — IT KEEPS YOU GOING."

Fikadu G. Tafesse, Ph.D.

ASSISTANT PROFESSOR OF MOLECULAR MICROBIOLOGY AND IMMUNOLOGY

Tafesse came to OHSU from the Ragon Institute of MGH, MIT and Harvard. His lab seeks to understand how viruses get past our immune systems during infection. He is pictured here wearing the full protective gear necessary for studying infectious diseases such as tuberculosis, HIV and viruses from the family Flaviviridae, which includes zika, dengue and yellow fever.

"My upbringing played a significant role in the kind of science I chose to pursue. I grew up in Ethiopia, and saw many close friends, family members and neighbors die of infectious diseases, mostly HIV and tuberculosis. Back then, there was no hope. It was my dream to understand how pathogens cause disease, and to be part of the team that solves these global epidemics.

"I feel extremely lucky to be doing this work at OHSU. Science requires patience but every experiment teaches us something. There are many small excitements along the way — it keeps you going.

"I hope that what I'm doing can have an impact not only in my home country but other developing countries as well. I am about to travel to Ethiopia to give a seminar at an infectious disease center there. My goal is to establish collaborations in Ethiopia and other African countries where these diseases are epidemic. It's important to connect the work to the place where the real problem is — that's my long-term goal."


CLASS II TYPE A/B3
3M

"BASIC SCIENTISTS ARE HARD-WORKING PEOPLE. BEING SMART HELPS, BUT THAT'S NOT ENOUGH. YOU HAVE TO HAVE A STUBBORN STREAK."

Isabelle Baconguis, Ph.D.

ASSISTANT SCIENTIST AND PRINCIPAL INVESTIGATOR, *VOLLUM INSTITUTE*

Baconguis is a structural biologist. Her lab is exploring the molecular underpinnings of whole-body salt balance to better understand diseases such as hypertension, a condition that affects more than 1 billion people worldwide. She is shown here with the FEI Titan Krios™ Cryo-Transmission Electron Microscope, which captures high-resolution images of macromolecules.

"I was a bit of a late bloomer, as a scientist. I wasn't one of those kids who was doing experiments at age 8. I always thought I would be a fighter pilot, actually. But once I got glasses, that vision faded! During my school years, I found that the more I was exposed to science, the more questions I had.

"I am now what's called an early independent investigator, because I skipped postdoctoral training and am leading my own research. My lab looks at the structure of epithelial sodium channels. This is unchartered territory in biomedical science. My hope is that once we know what these channels look like, we can better target drugs for conditions like hypertension.

"Basic science can be slow, but the fundamental discoveries we make in the lab are the building blocks of every drug you have ever heard of. Basic scientists are hard-working people. Being smart helps, but that's not enough. You have to have a stubborn streak."

"THIS QUIET LITTLE LADY WHO SELDOM TALKED ABOUT WORK WAS A TOTAL SUPERWOMAN. I TRY TO CHANNEL HER NOW IN MY DAY-TO-DAY WORK."

Erin C. Burns, M.D.

PEDIATRIC INTENSIVIST AND ASSISTANT PROFESSOR OF PEDIATRICS, *DOERNBECHER CHILDREN'S HOSPITAL*

Burns is a 2012 graduate from OHSU's Pediatrics Residency and completed OHSU's Pediatric Critical Care Fellowship in 2015. As part of the volunteer medical team for the International Children's Heart Foundation, Burns has traveled to Haiti and the Dominican Republic to help repair congenital heart defects in children. She is pictured here in the Doernbecher pediatric intensive care unit, where she helps seriously ill and injured children stabilize and heal.

"How did I decide to become an intensive care doctor? I often think back to my mom. One day when I was in high school, she was driving me home from a softball game and suddenly pulled the car over to a screeching halt. She jumped out of the car and ran back the way we had come. I hadn't been paying attention, but there was a big accident behind us. A man had flipped his car and he was trapped. My mom ran back to the wreck and manually extricated this large guy from his vehicle. My mom is about 5 foot 1, but she knew what she was doing — she was an operating room nurse. She wrapped up his mangled arm, holding pressure until the ambulance arrived. I took it all in. This quiet little lady who seldom talked about work was a total superwoman. I try to channel her now in my day-to-day work."

"MORE THAN ANYTHING, GROWING UP IN A RURAL ENVIRONMENT MAKES ME WANT TO GO BACK THERE TO PRACTICE MEDICINE."

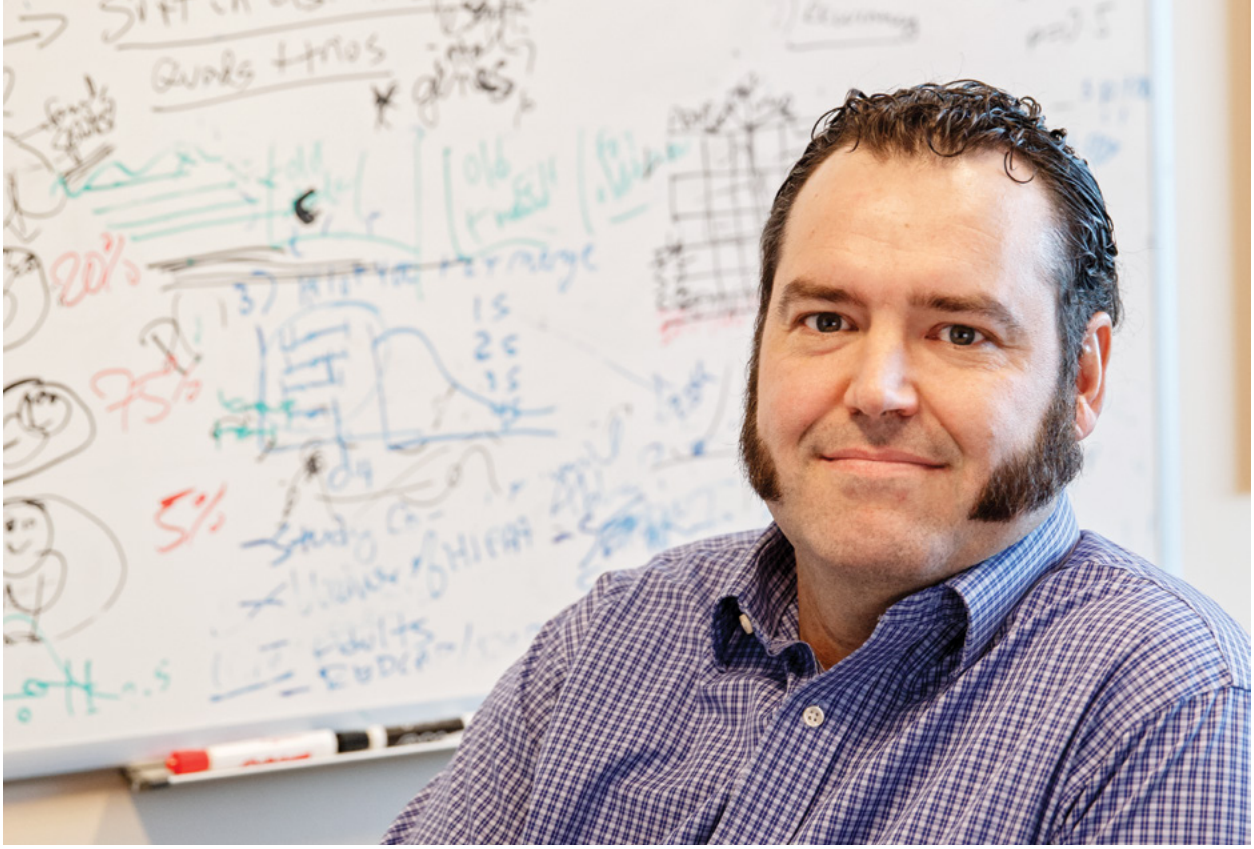
Evan Foulke

SECOND-YEAR MEDICAL STUDENT, *OHSU SCHOOL OF MEDICINE*

In 2015 Foulke was named one of eight Swindells Family Scholars, one of OHSU's most prestigious M.D. scholarship awards. Before starting medical school, Foulke served as a medical sergeant with the U.S. Army Special Forces. He is shown here in front of the OHSU Auditorium, where he studies.

"My dad did the Indian Health Service Scholarship Program as a doctor and my mom did it as a nurse practitioner. We lived on the Colville reservation in Omak, Washington, until I was about 12, when they bought a hazelnut farm southwest of Salem. More than anything, growing up in a rural environment makes me want to go back there to practice medicine. I love being in the country. Occasionally, when I get stir crazy in the city, I go work on the farm for a week.

"When I was deployed in Afghanistan and Central America, we learned how to treat things like scorpion stings, trauma and malnutrition. There were two physicians we could call on satellite phones, which made it less daunting, but it was also interesting to be able to do things myself. You learn how to make a decision and go with it. I think that applies to rural medicine, too."



"WHEN I TALK WITH INDIVIDUALS AND FAMILIES ABOUT THEIR HOPES FOR NEW DISCOVERIES AND INTERVENTIONS, I'M INSPIRED TO WORK HARDER, SMARTER AND FASTER."

Brian J. O'Roak, Ph.D.

ASSISTANT PROFESSOR OF MOLECULAR AND MEDICAL GENETICS

O'Roak was among the first in the world to identify new genes involved in autism risk. His lab's long-term goal is to develop early interventions and therapies that can dramatically improve the lives of those affected with such disorders. He is pictured here in his lab in Richard Jones Hall.

"Here's what makes me optimistic. Ten years ago, we really had no clue what genetic risk factors caused disorders like autism. We can now directly sequence genomes at a scale that was not conceivable when I started my Ph.D. In just the last three to four years, we have gone from a few genes we were confident were associated with autism, to 50 to 100 genes that we're highly confident in! These new genetically defined subtypes are providing important clues into the complex neurobiology of autism and bringing families together who have shared experiences.

"One of the reasons I came to OHSU was to work with Eric Fombonne, M.D., a world leader in autism research who has worked with autistic children and their families for decades. We are breaking down barriers between clinical care, basic research and families. Doernbecher is only a five-minute walk from my lab. When I talk with individuals and families about their hopes for new discoveries and interventions, I'm inspired to work harder, smarter and faster."


STUDENT
OHSU

"COMPASSION IS IMPORTANT. A GOOD NURSE IS SOMEONE WHO IS NOT ONLY BOOK SMART BUT ABLE TO RELATE TO THEIR PATIENT'S FEELINGS."

Arely Vega Garcia, R.N.

FIRST-YEAR STUDENT IN BACHELOR OF SCIENCE DEGREE PROGRAM, *OHSU SCHOOL OF NURSING*

Vega Garcia is one of many licensed registered nurses who come to OHSU for further training and experience. She continues to work evenings at a skilled nursing facility in Portland while she attends school. She spent her childhood in Peru, where her mother Gladys worked as a traveling nurse.

"When I was growing up, I would accompany my mother on her rounds. She would travel to neighboring towns with a cooler. At first I thought we were just visiting friends — she was so friendly and natural with everyone. It wasn't until later that I realized she was carrying vaccines for tuberculosis, polio and other diseases that you don't hear about in the U.S. They are still leading causes of death in Peru.

"In the future, I see myself doing humanitarian work overseas. I am from the developing world, and I understand those struggles. Compassion is important. A good nurse is someone who is not only book smart but able to relate to their patient's feelings. My mother taught me that — she did her job with love and dedication. I think that's the biggest reason I went to nursing school."

"THERE IS SO MUCH MORE WE CAN DO TO PREVENT DISEASE, JUST IN THE WAY WE LIVE OUR LIVES."

Brian Frank, M.D.

ASSISTANT PROFESSOR OF FAMILY MEDICINE

Frank is shown here at OHSU's Richmond Clinic, where he practices family medicine. Frank is a passionate believer in the power of nutrition and is involved in several community-based efforts to make it easier for low-income families to eat healthily.

"We just wrapped up a partnership between OHSU, Multnomah County, Portland State University, Zenger Farm and the Oregon Food Bank. We delivered weekly boxes of fresh food to dozens of low-income families, along with basic nutrition education and cooking demonstrations. The project was incredibly well received. We are still gathering data, but it looks like the participating families increased their consumption of fruits and vegetables and cut back on junk food. It was a great experience for everyone — families, farmers, clinic staff — people came together as a community.

"I am an optimist by nature. Problems like obesity and diabetes have multiple causes and will take a lot of work to improve. It is our responsibility to keep going. A hundred years ago, doctors were mainly focused on finding and stopping illness. Today, we know that there is so much more we can do to prevent disease, just in the way we live our lives."

"MY FAMILY IS FROM THE MIDWEST. WHEN MY MOTHER GOT CANCER, OUR FAMILY DIDN'T EVEN TALK ABOUT IT. THE CULTURE WAS TO PULL YOURSELF UP BY YOUR BOOTSTRAPS AND MOVE ON."

KrisAnn Talarico, L.C.S.W., OSW-C

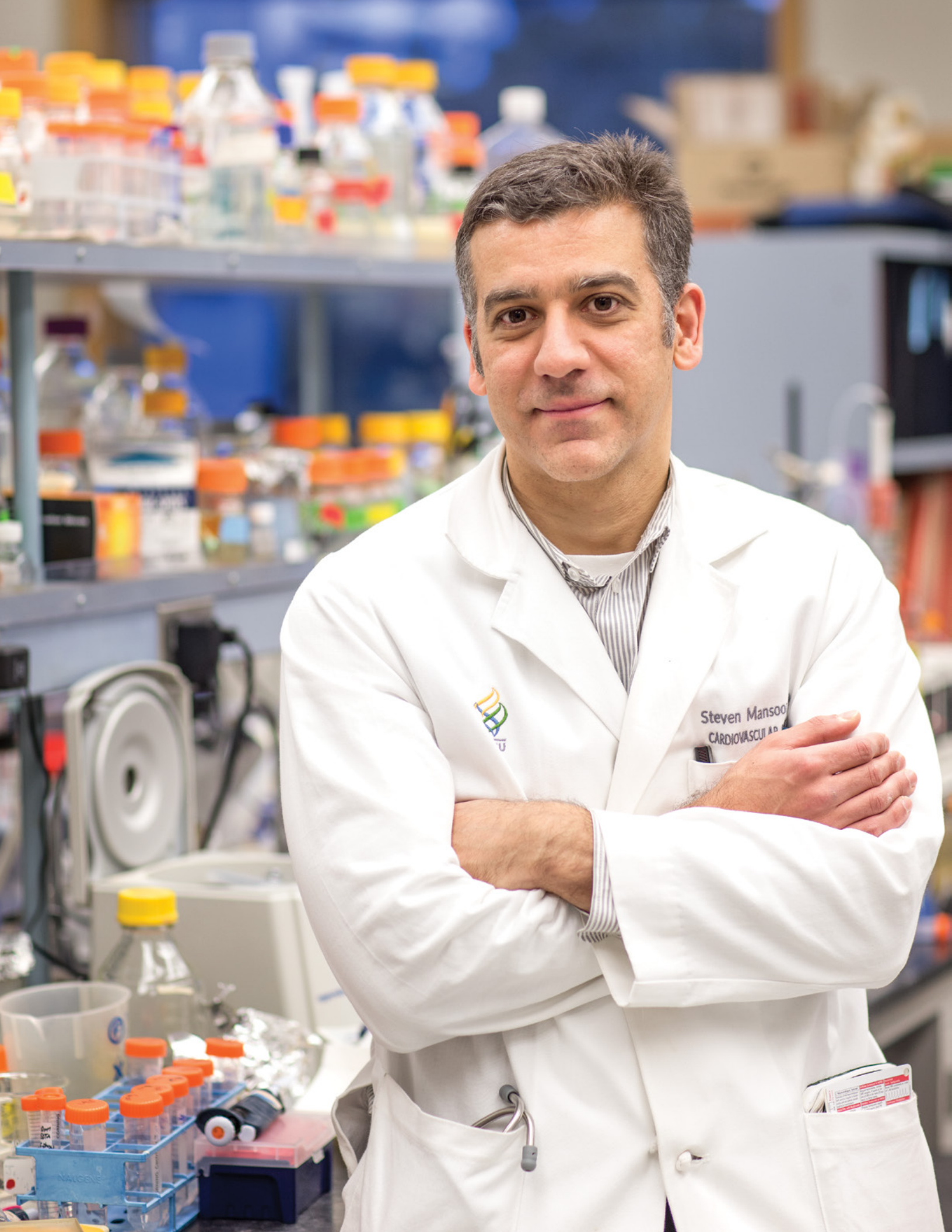
SOCIAL WORKER, *OHSU KNIGHT CANCER INSTITUTE*

Talarico is pictured here in her office at the Center for Health and Healing, where she supports patients and families affected by breast cancer and sarcoma. Talarico provides everything from counseling to help with temporary housing for families of patients who have traveled long distances for treatment at the OHSU Knight Cancer Institute.

"My family is from the Midwest. When my mother got cancer, our family didn't even talk about it. The culture was to pull yourself up by your bootstraps and move on. It made it hard to know how to be supportive, or what help to offer. So, as I was trying out different career ideas it occurred to me that maybe this was an area where I could make a difference.

"I often work with patients who have sarcoma, which can be lethal. Many are in their 20s and 30s, so they are old enough to make their own decisions, but their parents are usually still very involved. Sometimes families are ready to stop treatment before the patient is ready. And sometimes the patient is ready long before the family can face it. I try to make sure my young patients have a voice in their own care, and help them think through what kind of help and support they want from their families.

"The role of an oncology social worker didn't always exist. Now the field is gaining a better understanding of how important it is to help people cope with the emotional aftermath of cancer."


Steven Mansoo
CARDIOVASCU

"IT IS EXCITING TO LEAVE THE LAB LATE AT NIGHT KNOWING THAT I AM THE ONLY PERSON IN THE WORLD WHO IS AWARE OF A PROMISING NEW FINDING."

Steven Mansoor, M.D., Ph.D.

CARDIOLOGY FELLOW, *OHSU KNIGHT CARDIOVASCULAR INSTITUTE* & INVESTIGATOR, *VOLLUM INSTITUTE*

Mansoor spends 20 percent of his time caring for patients and the other 80 percent in the lab studying the molecular structure and function of protein receptors, research that could lead to more effective drugs for treatment of cardiovascular disease. He is a 2009 graduate of the M.D./Ph.D. program at the OHSU School of Medicine. He is pictured here in Eric Gouaux's lab at the Vollum Institute.

"It is exciting to leave the lab late at night knowing that I am the only person in the world who is aware of a promising new finding. The flip side of that coin is the dejection that comes with a failed experiment. Early in my graduate school career, science felt like a bit of a rollercoaster ride and I had to learn to temper the highs and the lows. My Ph.D. mentor, David Farrens, once said to me, 'Science is a marathon, not a sprint.' I always try to keep that advice in mind.

"I recently published a paper in *Nature* under the mentorship of Eric Gouaux, Ph.D. That manuscript was the culmination of more than three years of work. Scientific research requires a lot of delayed gratification. Clinical work, on the other hand, often provides immediate reward. Patients can improve quickly, sometimes instantaneously, following a procedure. I appreciate the balance between bench research and patient care."

"WHEN WE STARTED THE STUDY, WE HAD NO IDEA IF THIS TREATMENT WOULD WORK AT ALL."

Julie Graff, M.D.

ASSISTANT PROFESSOR OF MEDICINE, DIVISION OF ONCOLOGY,
PORTLAND VA MEDICAL CENTER & OHSU KNIGHT CANCER INSTITUTE

Graff is an oncologist specializing in prostate cancer at the OHSU Knight Cancer Institute. She treats patients and leads a research study that has provided the first-ever evidence that immunotherapy can slow life-threatening prostate cancer. Graff is pictured here in the infusion room at the Knight Cancer Institute, where patients receive chemotherapy and other treatments.

"When we started the study, we had no idea if this treatment would work at all. So it was exhilarating when our first patient went from having PSA levels of 80 to undetectable. [PSA stands for prostate-specific antigens, which become elevated in men with cancer.] We thought, this is a fluke. And then it happened four more times. It's been amazing and the patients are extremely appreciative. I am grateful to the men who agreed to take a chance and participate in our clinical trial. The treatment hasn't worked for everyone and there are some terrible side effects.

"Immunotherapy has been a paradigm shifter. It's been FDA approved to treat multiple cancer types. But we still don't fully understand why it works or what causes the side effects. If we can understand why it works in some patients and not others, maybe we can prime other patients so that they can become responders, too. I'll bet even now there are quite a few men around the world who can benefit from this type of medication. We just need to figure out who they are."

"WE ARE AN EXCITING COMBINATION OF VISIONARIES AND BUILDERS."

Owen McCarty, Ph.D.

INTERIM CHAIR, DEPARTMENT OF BIOMEDICAL ENGINEERING
PROFESSOR OF BIOMEDICAL ENGINEERING AND CELL, DEVELOPMENTAL AND CANCER BIOLOGY

McCarty came to OHSU from Oxford University in 2005. His lab uses engineering principles to develop tools that can detect, prevent and safely treat thrombotic complications such as heart attack and stroke. His team has also made recent breakthroughs in understanding the role that aspirin might play in reducing cancer cell growth. He is shown here in his lab in the Center for Health and Healing.

"I grew up cleaning houses with my mother in my spare time, and so was not exposed to the idea of a career in academic medicine until later. My plan of joining the Army was derailed when I tore my ACL playing basketball in high school. So, my dad took me on crutches into the Kodak plant, where he worked, and introduced me to his friend that worked in the research division. His friend started explaining about emulsions and contact area and how, if he knew more about thermodynamics, he could understand the problem and look into the unknown . . . and then he got very quiet and started looking down at his shoes. That's when I knew I had met my people! And so I went to school to become an engineer.

"Many engineers start by building models and then figure out how to use them, later. Our approach is to start with a clinical problem, like stroke, and work our way down. Our team is diverse — biologists, clinicians, engineers and physicists. We are an exciting combination of visionaries and builders. One of my most important collaborators is András Gruber, M.D. He trained as a doctor in Hungary before turning full-time to basic and translational research, and so has witnessed unmet clinical needs firsthand. You can find us tackling the next great problem over a coffee and pastry at the same table every Sunday morning, as we have for the past 10 years. That is one of the most rewarding parts of my career."

DONOR SPOTLIGHT /// Chloe Lam

Last summer, 11-year-old Chloe Lam went from Doernbecher patient — fighting for her life — to Doernbecher donor, determined to raise money to save the lives of others.

In the course of a day, the Lam family's world was turned upside down by their 11-year-old gymnast.

At 1 p.m., Chloe Lam was showing off her backflip at school. By 3 p.m., she arrived home and collapsed on the living room floor — an unusual occurrence, according to her mom, Sako Lam. Chloe woke up from her nap an hour later with a 104-degree fever. Sako called the pediatrician, who recommended they take her straight to OHSU Doernbecher Children's Hospital. After some initial tests, the doctors at Doernbecher thought Chloe had strep throat and sent her home with antibiotics.

But Chloe's condition only worsened, and the next day she returned to the hospital in an ambulance. The Doernbecher Emergency Department doctors rushed to pump her with fluids and antibiotics as she was severely dehydrated and her blood pressure was dangerously low.

"There were eight to 10 doctors and nurses in the room just pumping syringes of fluid into her veins, and you could hear them hitting the ground like shell casings," said Chloe's dad, Ronald Lam.

However, the doctors were still unsure what infection had taken over her body and made her so sick, so quickly. Doernbecher pediatric critical care specialist Amit Mehta, M.D., told Chloe's parents that they could not get the fluids into her system fast enough. "At one point, we looked and there must have been nine or 10 different bags hanging on that IV rack," said Ronald.

She's going to make it

Chloe doesn't remember much of her first days in the hospital, but she remembers waking up and asking her parents if they were going to go home. Her parents looked at the doctors for help — they didn't know the answer. "She'll go home with you guys, she's going to make it," replied Dr. Mehta with certainty.

"At that time, we knew were in good hands," said Sako.

After two days in the Pediatric Intensive Care Unit (PICU), Doernbecher pediatric infectious disease specialist Judith Guzman-Cottrill, D.O., sat with

Chloe's parents and listened to their story, reviewed Chloe's labs, and examined her from head to toe.

A shocking diagnosis

"We put all the pieces of the puzzle together and toxic shock syndrome quickly became the most probable cause of her illness," said Dr. Guzman-Cottrill. She came into Chloe's room and spoke the best words the Lam family had heard in days: "We figured it out."

Chloe had an extremely rare strain of strep, which was emitting toxins into her bloodstream and transforming into toxic shock syndrome, a rare reaction that can turn lethal if not caught in time.

Birth of a philanthropist

Two-and-a-half days after starting on the right antibiotics, Chloe was released from the hospital. And less than a month after her recovery, Chloe wanted to give back to the place that saved her life.

Inspired by a YouTube video, she decided to create a lemonade stand in her neighborhood to raise money for Doernbecher. Dressed in purple nursing scrubs and sporting a home-made, OHSU "I-CARE" badge, Chloe raised $311 from her first stand, with the help of her good friends Sarah, Kate and LaCei.

Later that summer, Chloe was selected to be part of Dunks for Doernbecher, a fundraising program that donates $25 to Doernbecher for every dunk made during a Portland Trail Blazers regular season game. That's when she got the idea to sell lemonade at her brother's basketball tryouts. With three lemonade stands she raised an additional $465, which she donated to the Gary & Christine Rood Family Pavilion, OHSU's new guest house for out-of-town families. Chloe believes it's important to help families and kids stay together, noting, "I wouldn't have fought so hard if my family wasn't there by my side."

A true entrepreneurial philanthropist, Chloe is always looking for new ways to raise money for Doernbecher. She is currently doing laundry for her mom at a rate of $2 per load — all of which she plans to donate.

"I am so impressed by how Chloe and her family have turned a frightening life event into such important, positive work. This is why I love pediatrics and working at Doernbecher," said Dr. Guzman-Cottrill.

> "I wouldn't have fought so hard if my family wasn't there by my side." *– Chloe Lam*

Chloe is not only a grateful patient and dedicated Doernbecher donor; she also aspires to be a Doernbecher doctor or nurse one day.

"I hope that I can save other lives, just like they saved mine," said Chloe.

OHSU Foundation
1121 SW Salmon Street
Suite 100
Portland, OR 97205

Non-Profit Organization
U.S. Postage
PAID
Permit No. 2888
Portland, Oregon

Discovery powered by generosity

Thanks to supporters like you, OHSU has earned a reputation for taking on the impossible — and succeeding. Join us as we take on a new set of bold challenges. Together we can innovate faster, save more lives and give hope to millions.

JOIN US

OnwardOHSU.org

503-228-1730 | **800-462-6608** | **ohsufinfo@ohsu.edu**

Call our main switchboard or contact our general e-mail address and we will connect you to the right person for your area of interest.