

Teaching, Healing and Discovery

2019-2020

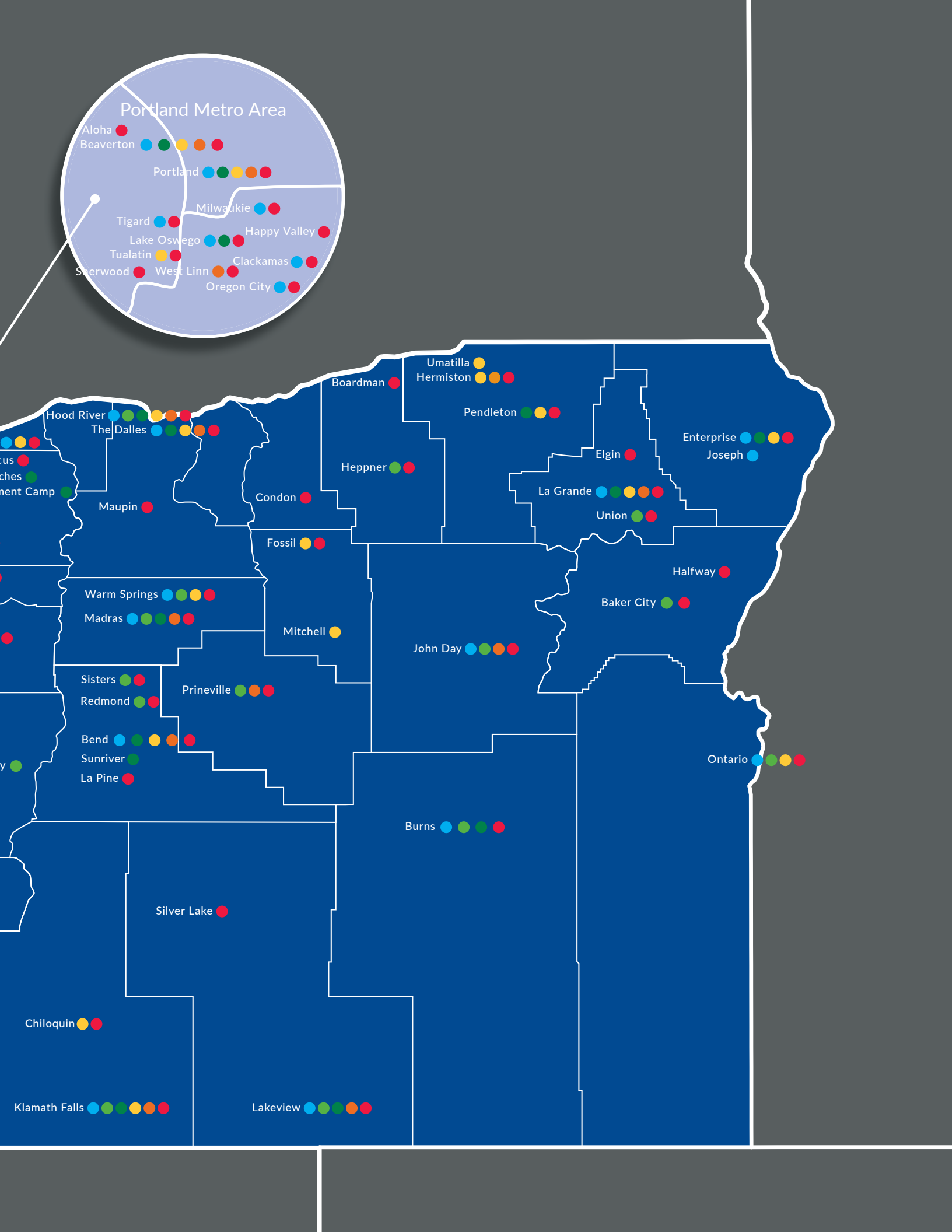


OHSU School of Medicine: Serving Oregon

●	Residency training sites*
●	Student rotations or clerkships
●	Continuing medical education
●	Clinical practice and/or telemedicine
●	Research
●	Oregon Rural Practice-based Research Network (ORPRN)

*Includes existing and planned sites for residencies in coming years.



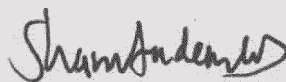


United by service to all Oregonians

The OHSU School of Medicine leads across missions, embodying what it means to be an academic health center. Our faculty and clinicians fuel the clinical enterprise, including OHSU Hospital, ranked #1 in Oregon in *U.S. News & World Report*; our researchers, centers and institutes comprise two-thirds of the OHSU scientific enterprise, ranked among the top 20 research institutions in innovation by *Nature* magazine, and our education programs are nationally recognized and leaders in curriculum reform.

We share in OHSU's commitment to care for and serve all Oregonians and beyond. Our programs reach across the state (see map pages 2-3), serving, partnering with and learning from our rural, small-town, suburban and urban communities.

Dean's office priorities include enhancing faculty development, wellness, diversity and inclusion and support for physician-scientists. We are also "seeing the 'me' in LCME" by focusing on continuous improvement as we prepare for our Liaison Committee on Medical Education site visit in 2020. These efforts and more are reflected in the following pages, bound together by a sense of pride in our work and a commitment to serve.



Sharon Anderson, M.D. R. '82
Dean, OHSU School of Medicine



Sharon Anderson, M.D. R. '82

By the numbers

2,324	Faculty
5,195	Employees
2,274	Students and trainees
18,998	Alumni
27	Basic science and clinical departments
32	Centers, institutes and freestanding divisions
\$1.05	Billion total budget

Research

628	Funded investigators
\$305	Million in research funding
30th	In NIH funding among U.S. medical schools (<i>2017 Blue Ridge Institute for Medical Research</i>)

Clinical

1,894	OHSU Practice Plan (OPP) members
1,098,517	Annual patient visits at OHSU
\$644	Million in OPP revenue, 2018-19

Education

M.D. program

603	M.D. students
160	Entering M.D. class - 78 percent, Oregon or of Oregon heritage - 6 percent, underrepresented minority - 16 percent, rural - 31 percent, disadvantaged/faced adversity
45	Percent M.D. grads practice in Oregon (AAMC)

Graduate Medical Education

845	Residents and fellows
83	Graduate medical education programs
276	Entering residents and fellows - 12 percent, underrepresented minority - 20 percent, rural - 43 percent, disadvantaged/faced adversity
53	Percent GME grads who practice in Oregon (AAMC)

Graduate studies

826	Ph.D., master's and certificate students
32	Graduate degree programs
325	Incoming graduate studies students - 13 percent, underrepresented minority

Continuing professional development

11,520	Learners in 222 activities
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Using our voices

OHSU Students Against Gun Violence led walk-outs in spring 2018 in recognition of the Marjory Stoneman Douglas High School shooting in Florida and the 19th anniversary of the Columbine High School shooting in Colorado. At OHSU, student and trainee advocacy is also fueling efforts to foster diversity and inclusion, improve wellness and address gender violence.



“As students, we see no excuse for our nation’s failure to act on such a widespread, devastating and preventable source of physical and psychological harm in our communities.”

– Elizabeth Swanson, M.D./Ph.D. student,
OHSU School of Medicine, on gun violence



Patient care is people care

PEOPLE-FOCUSED MISSION

The OHSU Practice Plan is the largest organized clinical practice in Oregon, with more than 1,800 practicing clinician members. OPP members are the physicians, nurse practitioners, physician assistants and other providers that care for the more than 280,000 unique patients a year at OHSU hospitals and medical clinics. Alongside their hospital counterparts, OPP members and administrative leaders help guide the expanding OHSU health system.



“OHSU Practice Plan clinicians are actively engaged in shaping our growth and our response to the changing health care system.”

– **Anthony Masciotra, M.B.A.,
C.P.A., OPP CEO and
senior associate dean
for clinical practice,
OHSU School of Medicine**



A group of clinicians from across the OHSU Practice Plan, known as the Physician Advisory Committee, meets monthly to address issues affecting OPP clinicians while thinking creatively about OHSU’s role in the health care system.

Advanced practice providers are a growing segment of the OPP, reflecting an emphasis on team-based patient care. In 2018, Alex Nydahl, M.P.A.S. ’15, P.A.-C., instructor of medicine, OHSU School of Medicine, was the first APP member to be elected to the OPP Board of Directors and Management Committee. The APP Assessment and Improvement Project – an institution-wide look at the APP experience – is one example of the comprehensive approach the OPP takes to fulfill its goals:

- Supporting people and wellness
- Improving access
- Creating value
- Building partnerships

Improving care for all Oregonians

Based in the School of Medicine with an eye on the whole state, the OHSU Practice Plan is an essential force in OHSU’s mission to care for all Oregonians.

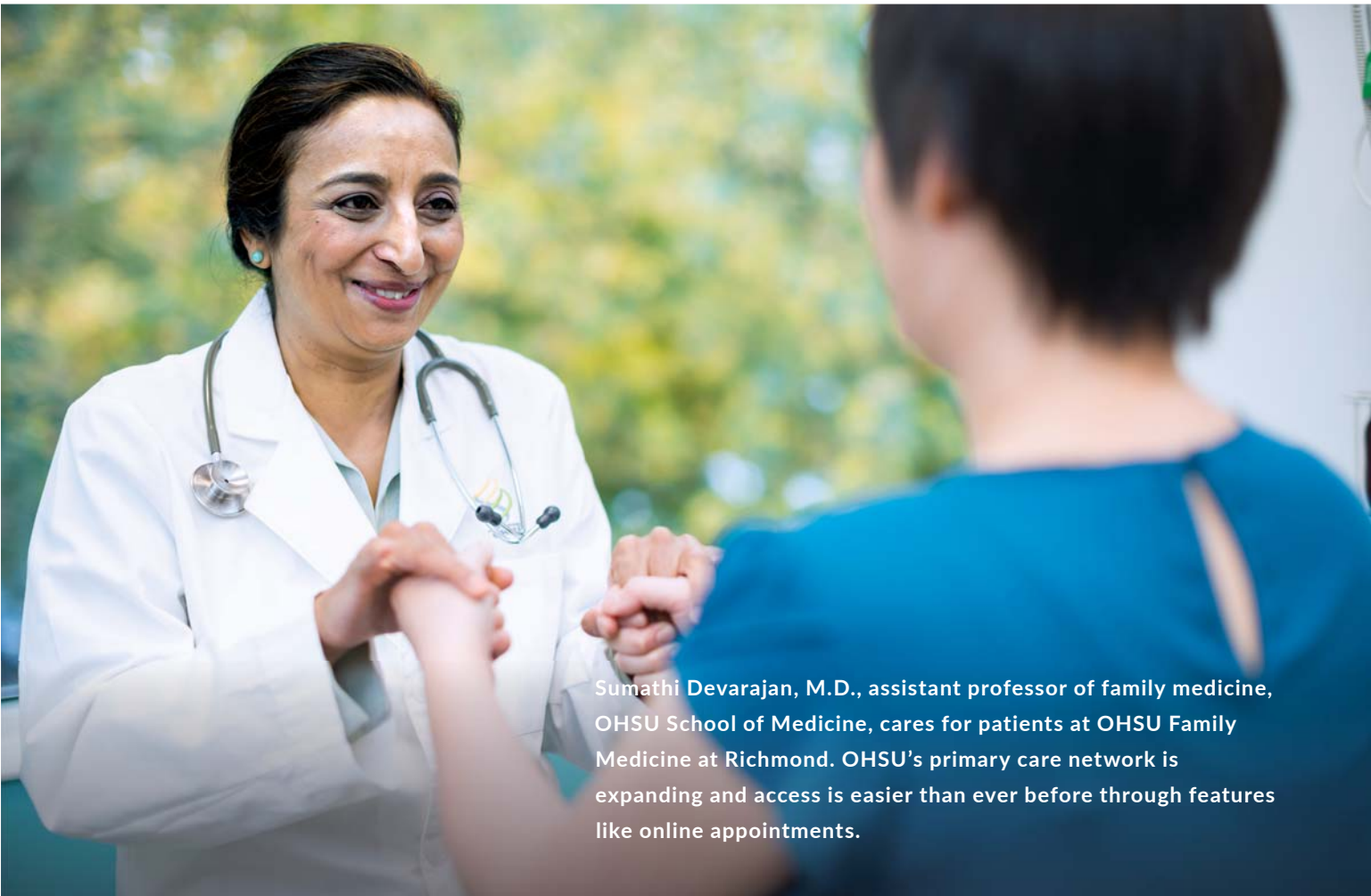
- **Organizing care**
 - The new Office of Primary Care and Population Health and the Primary Care Leadership Council help the OPP innovate and organize for more efficient, patient-centered primary care across the health system. The Center for Primary Care Research complements this work (see page 17).
 - Through CMS programs such as Comprehensive Primary Care Plus and Bundled Payments for Care Improvement Advanced, OPP clinicians provide value-based care that aims to improve patient outcomes, while using Healthy Planet for population health data. Staff in patient navigator roles help coordinate care for OHSU, Adventist and Tuality patients.
- **Sharing expertise**
 - The OPP participates in the Oregon ECHO Network to give Oregon’s primary care clinicians and their teams the knowledge and tools to manage health conditions that they typically refer to specialty care.
 - Tuality and OHSU clinicians are expanding their use of telemedicine in the intensive care unit, benefiting patients in Hillsboro who are receiving critical care in their community.



Graduate medical education trainees, like these residents in anesthesiology and perioperative medicine, work alongside faculty clinicians. Many stay as faculty. GME programs host “second look” days, providing an additional opportunity for diverse candidates to get to know OHSU.

• Setting the standard

- OPP clinicians and the Office of Clinical Integration and Evidence-based Practice create clinical guidelines for the health system in support of one standard of care. In 2018, the group facilitated or implemented guidelines for opioid prescribing, acute low back pain, heart failure and colorectal cancer screening.
- Maisie Shindo, M.D., professor of otolaryngology, head and neck surgery, OHSU School of Medicine (pictured, page 7 with patient David Knierim), exemplifies clinician response to the opioid crisis. More than half of all patients at the OHSU Thyroid and Parathyroid Center went home with no opioids at all.
- The Comprehensive Pain Center has a new location in Beaverton to provide non-opioid treatments for pain in an ambulatory setting.



Sumathi Devarajan, M.D., assistant professor of family medicine, OHSU School of Medicine, cares for patients at OHSU Family Medicine at Richmond. OHSU’s primary care network is expanding and access is easier than ever before through features like online appointments.

“As the OHSU health system grows, so do the needs of our partners, clinicians, care givers and patients. The Office of Community Engagement and Support is a hub for supporting this growth.”

– **Suzanne Simmons,**
M.B.A., OPP chief
administrative officer



Primary care clinicians at Mid-Columbia Medical Center in The Dalles are one of the first groups of clinical associates that the Office of Community Engagement and Support has worked with. The team includes eight physicians, five nurse practitioners and four physician assistants.

Supporting a growing health system

From hiring and placing clinicians to improving operations, the OHSU Practice Plan is responding to the needs of the growing health system.

- The Office of Community Engagement and Support assists OHSU clinical departments and affiliated hospitals and clinics with recruitment, hiring and onboarding of clinical associates and general navigation of the institution.
- The Ambulatory Access initiative focuses on improving access to OHSU clinics. One standard measure of success is the third next available appointment time; in neurology, this went from 160 days to 69 days – a huge improvement.
- Mission Control is the nerve center for transfers into the OHSU health system from around the state. From June 2017 to January 2019, Mission Control transferred 972 patients to Tuality and Adventist, keeping beds open for patients needing specialized services at OHSU Hospital and improving the transfer acceptance rate to 98 percent.
- Clinical departments are hiring approximately 19 new physicians and 12 advanced practice providers to support patient care in the Center for Health & Healing Building 2. The South Waterfront facility opens in April 2019.
- Department of Emergency Medicine clinicians staff emergency rooms at Columbia Memorial Hospital in Astoria, Tuality Community Hospital in Hillsboro, Doernbecher Children’s Hospital and OHSU Hospital in Portland, and, come July 2019, Adventist Health Portland.

Tomorrow’s leaders

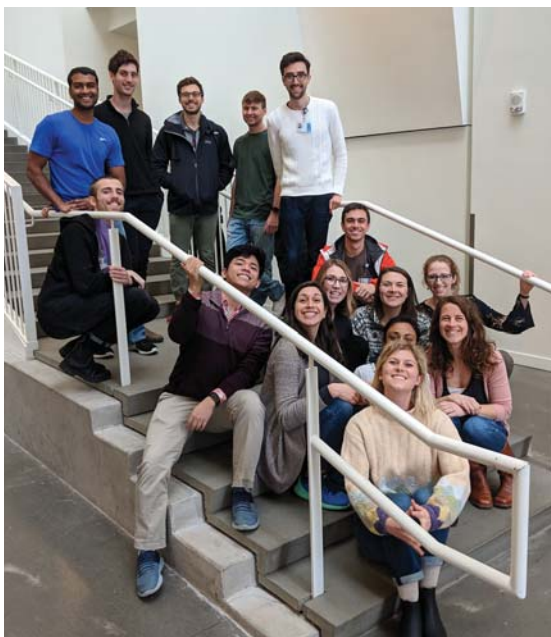
OPP members know the organization inside and out and are prime candidates to be tomorrow’s leaders for the growing health system. In partnership with the Division of Continuing Professional Development, the OPP offers grants to send clinical faculty to leadership development courses – boosting their career development and capacity to support team morale.

Education interwoven with Oregon

PACE-SETTING PROGRAMS

The OHSU School of Medicine prepares more than 2,200 students and trainees for a dynamic health care and biomedical research environment to advance health for all and serve where needed from urban to rural settings. In turn, they are increasingly shaping the culture of academic medicine with their advocacy for a more diverse, inclusive, respectful and healthy climate.





Megan Furnari, M.D., M.S., director of medical student wellness and leadership development, (second step, pink shirt) convened the Student Wellness Committee to help guide programming, including Nourish, which supports students preparing for the Step 1 exam.



The Alliance for Visible Diversity in Science, a Ph.D. student, postdoc and faculty group, is working with leadership to foster diversity and inclusion. The group hosted Dr. John Matsui, Berkeley Biology Scholars Program co-founder, in fall 2018.

M.D. program

The first class to complete the full *YOUR M.D.* curriculum turned heads when 100 percent of the students matched to residency programs, compared to 93 percent nationally. A personalized, integrated experience, the transformed M.D. curriculum favors active learning, including moving more quickly into clinical rotations. Students progress by demonstrating competency in core areas. Some graduate early, lowering debt.

OHSU is a leader in curriculum reform and the teaching faculty are nationally recognized for their scholarship.

Student and leadership dialogue and preparation for the 2020 Liaison Committee on Medical Education site visit is fostering continuous improvement. Efforts include a new medical student wellness and leadership development program; the school's first assistant dean for diversity and inclusion; diversity navigator faculty who guide diverse M.D. students, and multicultural safe space.

Graduate studies

A tremendous expansion in research at OHSU has enhanced graduate education in the biomedical sciences, with more than 300 research faculty and 32 graduate programs. Program highlights include:

- New Ph.D. in Clinical Psychology addressing demand for training and for mental health professionals in Oregon.
- Took on and plan to permanently add now-closed Marylhurst University's Food Systems & Society program to the school's Human Nutrition portfolio.
- A new, interdisciplinary Ph.D. in Biomedical Science is anticipated to launch in fall 2020 with an individualized curriculum as students progress through their dissertation research.

Graduate medical education

Spanning 83 ACGME-accredited residency and fellowship programs, OHSU School of Medicine trainees are key contributors to the health care mission at OHSU and across the state. The school is expanding residency slots by 100 in the next 10 years to further address Oregon's workforce needs.



Cascades East Family Medicine residents Kat Fausch, M.D., (left) and Margo Roemeling, M.D., practice wilderness medicine techniques with their program, based in Klamath Falls.

“I want to serve where I can have the biggest impact, with the people who need me most,” said Dr. Roemeling.

Wellness is a focus. When residents spoke out about stressful conditions in the hospital, GME leaders held listening sessions with 200 residents and are partnering with the House Officers Association and hospital leaders to make improvements. A second-look program builds relationships to attract diverse residents who may choose to stay on as faculty.

Continuing professional development

The Division of Continuing Professional Development is the largest provider of continuing medical education and maintenance of certification credit in the state.

- Through teleconferencing, traveling CME and the Oregon ECHO Network, OHSU faculty share their expertise with clinicians from Seaside to Coos Bay, Pendleton to Lakeview.
- The Primary Care Review statewide conference celebrates 50 years of providing the latest clinical information and critical review of topics essential to primary care practice.
- New programs include Refugee Health, Pediatric Mental Health and Interprofessional Healthcare.

Committed to rural Oregon

Rural experience is threaded throughout the M.D. and physician assistant program curricula; students choose from dozens of rural rotations, which, in the M.D. program, supplement the traditional Rural and Community Health Clerkship.

Where a resident physician trains is a more predictable indicator of where they will practice than where they obtain their medical degree, a key consideration when placing trainees across the state, including:

- General surgery and family medicine residents have long trained in rural Oregon.
- Emergency medicine residents began rotating at Astoria’s Columbia Memorial Hospital in 2016.
- Internal medicine residents began rotating at Coos Bay’s Bay Area Hospital in 2018.
- Neurosurgery residents will begin rotations in Hillsboro in 2019, with more programs to follow.



Physician assistants, reading their oath at graduation, are increasingly key contributors on health care teams. Nearly a quarter of OHSU P.A. alumni practice in rural areas, many in primary care.

“Students from our tribal communities are exceedingly likely to return there to help solve health inequities and to serve as role models for the next generation of physicians. We just need to get them in the door and support their success.”

– Erik Brodt, M.D., assistant professor of family medicine, OHSU School of Medicine, and director of the Northwest Native American Center of Excellence

Culturally agile healers

Meeting the health care needs of Oregon tribes and developing a new generation of indigenous health providers are among the goals of the Wy’East Post-Baccalaureate Pathway, launched by the Northwest Native American Center of Excellence at OHSU in 2018 (Wy’East scholars pictured at orientation, page 11). Wy’east is a 10-month post-baccalaureate pathway designed to prepare American Indian and Alaska Native students to excel in medical school. Upon successful completion of the coursework, participants earn conditional acceptance into the OHSU M.D. program.

Wy’East scholar Candice Jimenez, raised on the Confederated Tribes of Warm Springs Reservation in Central Oregon, remembers accompanying her grandma on doctor’s visits and wondering how her grandma’s health could have been better if the providers understood and could incorporate her cultural context.

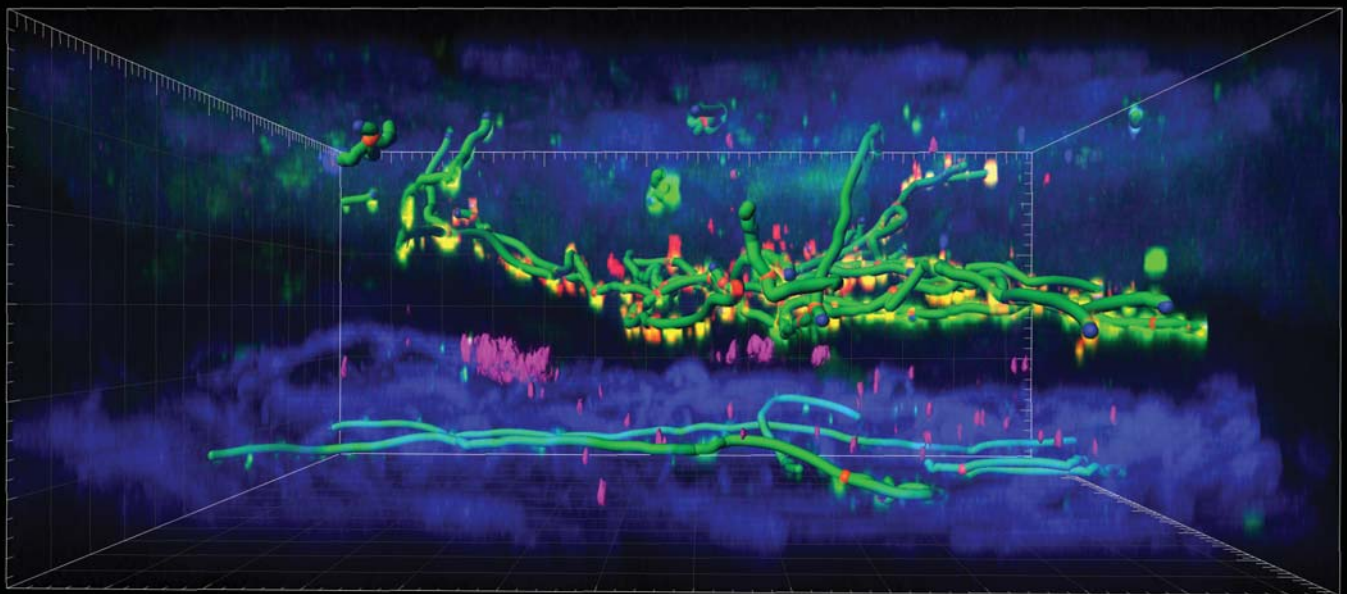
“I had a vision for what a culturally agile healer could look like,” Jimenez said. “We represent the communities we want to serve.”

Launched with a major federal grant, the Northwest Native American Center of Excellence is a collaboration between OHSU, Portland State University and the Northwest Portland Area Indian Health Board – including all 43 Pacific Northwest tribes.

The search for better health

CATALYZING DISCOVERY

The School of Medicine is home to the largest portion of OHSU's research enterprise, with more than 3,500 faculty, postdocs, research staff and graduate students working in the basic, translational and clinical sciences. Researchers utilize some of the most unique and state-of-the-art facilities and instrumentation in the country, including the Advanced Imaging Research Center and the OHSU Center for Spatial Systems Biomedicine. The result is a vibrant and highly collegial intellectual community pursuing some of the biggest questions in health and science.





Thanks to an expanded partnership with the Pacific Northwest National Laboratory, OHSU has added four new Cryo-EM microscopes to its arsenal of powerful imaging and multiscale analysis technologies to fuel discovery. Craig Yoshioka, Ph.D., research assistant professor of biomedical engineering, OHSU School of Medicine, explains how the cryo-EM microscope operates.

Collaborative culture, high-impact results

The school is known for its collaborative spirit among researchers and synergistic partnerships with regional institutions to prime biomedical discovery in the Northwest. Longtime partners include Oregon State University, Portland State University, University of Oregon and the VA Portland Health Care System. Among notable 2018 collaborations that the school helped lead:

- OHSU partnered with Pacific Northwest National Laboratory to become one of three national centers established by the National Institutes of Health in cryo-electron microscopy. Researchers in the Pacific Northwest Center for Cryo-EM on the OHSU campus will study cells at the atomic level using four new powerful microscopes and train scientists nationwide.
- A multi-institution team of researchers led by Jeff Tyner, Ph.D., associate professor of cell, developmental and cancer biology, OHSU School of Medicine, published the largest cancer dataset of its kind in *Nature* to accelerate the search for new AML treatments. Dr. Tyner is a researcher with the OHSU Knight Cancer Institute, which opened the Knight Cancer Research Building in fall 2018 to catalyze collaboration across cancer-related disciplines.
- Physician-scientists and basic scientists led by Matthew Drake, M.D., assistant professor of medicine, OHSU School of Medicine, developed a new imaging technique using OHSU's state-of-the-art confocal microscopes to link airway nerve density with asthma symptoms of greater severity (photo, page 15). Now researchers are investigating whether these changes are preventable or reversible, offering fresh hope to the 235 million people worldwide living with asthma.

Dr. Drake's assessment of the teamwork on asthma, published in *Science Translational Medicine*: "This work couldn't have been done without outstanding collaboration within our team and without OHSU's support for research, particularly for early-stage investigators."



Phoebe Lin, M.D., Ph.D., associate professor of ophthalmology, OHSU School of Medicine, used preliminary data partially generated by the school's support for physician-scientists to earn a highly competitive Edward N. & Della L. Thome Memorial Foundation Award.



Daelyn Richards, a Ph.D. candidate in the Program in Molecular and Cellular Biology, OHSU School of Medicine, develops such novel treatments as a gene therapy strategy using CRISPR technology to edit mutated genes in search of a cure for PKU, a rare metabolic disorder.

Supporting physician-scientists

Dean Sharon Anderson has prioritized support to sustain the work of physician scientists at OHSU and attract more. The program is a comprehensive approach that provides support across the professional continuum, helping departments and units create robust start-up packages and support the work of junior scientists to reach the level of independent funding.

Two inaugural recipients received funding in 2018: Phoebe Lin, M.D., Ph.D., associate professor of ophthalmology, OHSU School of Medicine, studies age-related macular degeneration. Rajan Kulkarni, M.D., Ph.D., assistant professor of dermatology, OHSU School of Medicine, and staff dermatologist, VA Portland Health Care System, investigates tumor heterogeneity through single cell isolation and analysis, for all cancers, but primarily in melanoma, prostate and lung cancers.

Student ingenuity propels advances

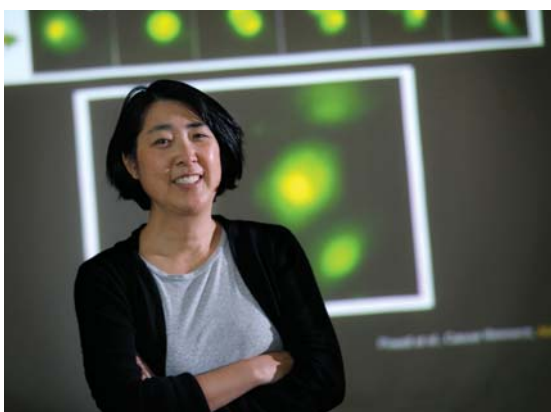
The School of Medicine's more than 360 graduate students are an integral part of the research enterprise. They train in the latest methods and contribute in significant ways to research projects as they pursue their Ph.D. and master's degrees. Top Ph.D. students receive highly competitive ARCS (Achievement Rewards for College Scientists) Foundation financial awards.

Among many examples, Ph.D. student Daelyn Richards researches improved treatments for PKU, or phenylketonuria, a rare metabolic disorder, and has raised more than \$180,000 towards PKU research. Her mentor, Cary Harding, M.D., professor of molecular and medical genetics, OHSU School of Medicine, led the development of a life-changing treatment for people with PKU, which received FDA approval in 2018.

"Daelyn has a knack for explaining her complicated research to lay people in a clear, concise and entertaining way," said Dr. Harding. "Her creativity is a tremendous asset to her science."



Damien Fair, P.A.-C., Ph.D., associate professor of behavioral neuroscience and psychiatry, OHSU School of Medicine, co-led a study published in *Nature Neuroscience* that linked inflammation in pregnant women to newborn brain function. It could provide avenues for sparing children potential mental health and brain development impacts. Fair's research team includes Mollie Marr, an M.D., Ph.D. student in behavioral neuroscience. A Bill & Melinda Gates Foundation grant is furthering this work.



Engine of biomedical discovery

The School of Medicine collaborates closely with the Office of the OHSU Chief Research Officer to build infrastructure and improve systems to propel advances from bench to bedside. The school, for example, established the Center for Primary Care Research and Innovation in 2018 to support OHSU researchers and physicians working to understand, improve and transform primary health care. Jennifer DeVoe, M.D., D.Phil., chair and professor of family medicine, OHSU School of Medicine, is inaugural director.

Additional 2018 highlights include:

- OHSU was the third institution nationwide and first in Oregon to perform a transcatheter mitral valve replacement as part of the APOLLO Trial, which is evaluating the safety and efficacy of Medtronic's Intrepid™ Transcatheter Mitral Valve Replacement, or TMVR, system. The procedure allows for replacing a mitral valve without open heart surgery, lessening patient risk and recovery time. Firas Zahr, M.D., and Howard Song, M.D., Ph.D., co-directors of the OHSU Knight Cardiovascular Institute's Complex Heart Valve Program, led the replacement procedure.
- The March of Dimes recognized Kent Thornburg, Ph.D., professor of medicine and the M. Lowell Edwards Chair of Cardiovascular Research, Knight Cardiovascular Institute, for changing the way scientists view maternal-fetal nutrition and the risk of chronic disease later in life. Dr. Thornburg received the organization's Agnes Higgins Award; he is also director of the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness.
- Melissa Wong, Ph.D., (left) associate professor and vice chair of cell, developmental and cancer biology, was senior author of a report in *Science Advances* showing that tumor cells fuse with immune cells to become more aggressive, suggesting opportunities for reducing the lethality of cancer.

Dean's office leadership



Sharon Anderson, M.D., Dean



Irene Barhyte, C.P.A., C.T.P.,
Senior Associate Dean for Finance



Daniel Marks, M.D., Ph.D., Senior
Associate Dean for Research



Anthony Masciotra, M.B.A.,
C.P.A., Senior Associate Dean for
Clinical Practice



George Mejicano, M.D., M.S.,
Senior Associate Dean for
Education



Atif Zaman, M.D., M.P.H., Senior
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On the cover: Fourth-year medical students Molly Rabinowitz (left) and MC Bohnett celebrate with their dog, Ricky, on Match Day, March 16, 2018. One hundred percent of the M.D. Class of 2018 matched to a residency program, a vote of confidence in the first class to complete the full, transformed M.D. curriculum. (Photo by Kristyna Wentz-Graff).

Report created by OHSU School of Medicine Dean's Office Communications Team;
photos by Kristyna Wentz-Graff, Jordan Sleeth and Aaron Bieleck.