

Kaiser Permanente Research



RESEARCH

as a tool for change



Department of Research & Evaluation
2016 Annual Report



“It has always been our opinion that a medical care program worthy of perpetuation, in addition to being economically sound, must provide teaching, training, and research, all so necessary for the maintenance of high-quality care.”

— *Sidney R. Garfield, MD*
Kaiser Permanente Co-founder
1945



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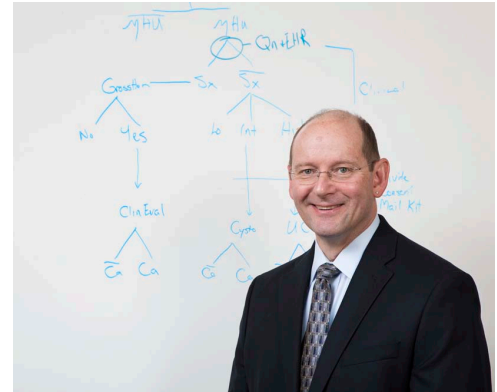
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Message from the Senior Director

A decade ago, I flew out from the Midwest to interview for a job leading the Department of Research & Evaluation. I had never been to Pasadena before. It felt welcoming and familiar: like a small Midwest city, except with palm trees (and slightly higher real estate prices). But what really made me want to live here was a conversation with Michael Kanter, MD, regional medical director of Quality and Clinical Analysis for the Southern California Permanente Medical Group.

In that first conversation, he told me clearly that he wanted to grow the research program, but he wasn't interested in more "esoteric epidemiology." It took me a moment to digest that—I am an epidemiologist by training, and prefer not to think my work is esoteric—but as he explained his vision, I became increasingly inspired.



His idea was to use research as a tool for change. He felt that performance improvement should be done with the rigor of research. Research embedded in a health care organization should be focused on clinically relevant questions. Kaiser Permanente Southern California would use the answers to improve care and health outcomes for our members. We would share that knowledge with the larger medical community by publishing our findings.

It was a different view of research, but had deep roots in Permanente Medicine. As far back as 1945, Kaiser Permanente co-founder Sidney R. Garfield, MD, saw research, along with teaching and training, as critical to "the maintenance of high-quality care."

By the end of the conversation, I caught Dr. Kanter's enthusiasm. A few months later, I moved to Southern California to start the job.

Since then, we've built the research program around this vision. Each year, we have more and more examples of how our research has been a tool for change. Our research informs how we prevent heart attacks, our understanding of women's treatment choices for early-stage breast cancer, our use of telemedicine to treat patients experiencing a stroke, and our strategies to reduce hospital readmissions.

Transforming research questions into actionable findings takes a combination of clinical and scientific expertise. Our investigators come from many fields: epidemiology, biostatistics, clinical trials, health services research, implementation science, and behavioral research. Our staff bring a wide range of skills to our research program, from statistical design and analysis to qualitative research methodologies.

Clinicians from dozens of specialties and sub-specialties engage in research, providing a frontline perspective on clinical problems as well as critical insights into how care is delivered at Kaiser Permanente. The Clinician Investigator Program is a great example of this. Other vital research partners include our medical centers, clinical departments, laboratories, pharmacies, regional administrators, and nurses. We couldn't move forward on large projects like the Kaiser Permanente Research Bank without support from these internal partners.

I hope you enjoy reading this year's Annual Report. The stories show just a few examples of how our people have worked together to make research a tool for change. To our researchers, staff, and clinical and operational partners: Thank you all for your contributions to our research program. Your work is a crucial part of the Kaiser Permanente vision—to be the leader in Total Health by making lives better.

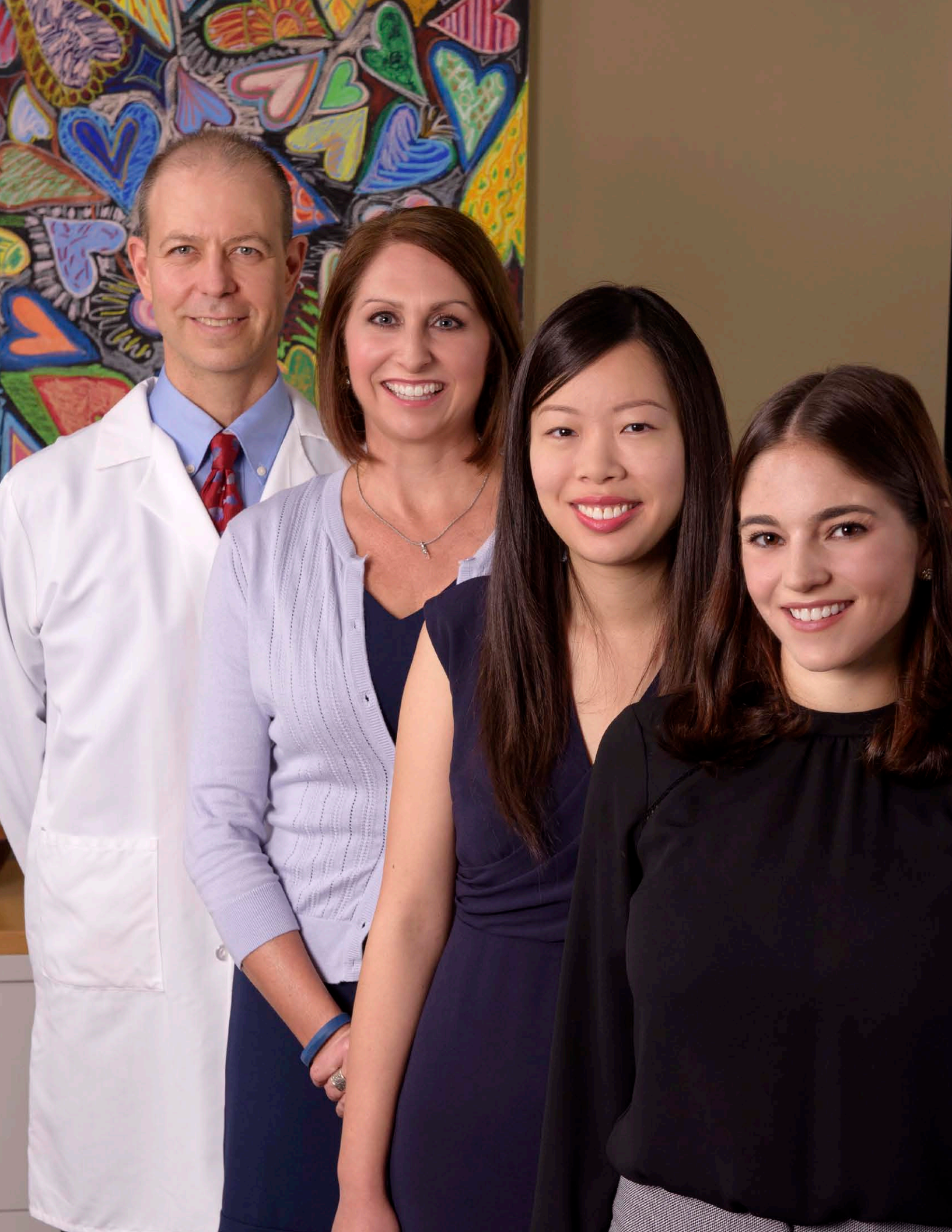


Steven J. Jacobsen, MD, PhD
Senior Director of Research



RESEARCH HIGHLIGHTS





Preventing heart attacks

Research shows heart attack rates declining at KPSC

During medical school, Ronald D. Scott debated which field of medicine to enter. But he knew one thing for sure: He wanted to be able to prevent illness, not just treat it.

So, he called a Kaiser Permanente Southern California recruiter for advice.

"I admired that Kaiser Permanente did a lot of prevention work and could also make a difference in public health," he said.

Today, Ronald Scott, MD, is the cardiovascular co-lead for the Southern California Permanente Medical Group. He's been working with other physicians and researchers from the Department of Research & Evaluation to prevent heart attacks, helping patients live longer and healthier lives.

Recently he worked with Kristi Reynolds, PhD, MPH, the director of the Division of Epidemiologic Research at R&E. Their research shows that KPSC members are being hospitalized less frequently for heart attacks in all sex, racial/ethnic, and age groups.

"Our rates of heart attacks have been declining over the past 15 years," said Dr. Reynolds, who is leading the study. "From 2000 to 2014, we've seen about a 4% decline per year in the number of people hospitalized with heart attacks, which has coincided with advances in many prevention efforts."

Blood pressure control improved

In the early 2000s, about 40% of KPSC members with hypertension, one of the major causes of heart attacks, had their blood pressure controlled. Now that rate is 90%.

Previous page: Dr. Ronald Scott, Dr. Kristi Reynolds, Dr. Gloria Chi, Dr. Stephanie Reading



Dr. Ronald Scott, Ema Montañez

Among the many research studies that guided the efforts were in-depth looks at lipid screenings, statin adherence, and cholesterol guidelines. At the same time, physicians developed systems to share best practices, and developed metrics to compare performance from medical center to medical center.

Organization changed focus to prevent disease

Since the early 2000s, KPSC has changed its focus from managing individual chronic conditions to a system focused on creating reliable processes for care of multiple conditions at the same time. The program, known as Complete Care, encompassed system-wide efforts to cut heart disease by lowering cholesterol and blood pressure. This included the creation of a hypertension registry, standardization of blood pressure measurements, and creation of internal treatment guidelines. Patients received easy access to nonphysicians, such as medical assistants and nurses, to help manage their conditions.

In addition, steps were taken to motivate and involve physicians and patients. Physicians talked to patients about quitting smoking, losing weight, eating healthy, exercising, and improving glucose control for those with diabetes. Efforts were made to prescribe cholesterol-lowering statins for people with high cholesterol, but also for people at risk of heart attacks.

Research was the tool that measured the progress along the way. It also showed physicians what worked.

"We do our best work when we have research involved in the clinical operations and performance improvement activities with our physicians and regional quality efforts," said Michael Kanter, MD, regional medical director, Quality and Clinical Analysis, SCPMG.

Studying the trends of heart attacks at KPSC

Dr. Reynolds recalls that from the time she arrived at R&E in 2007, she and Dr. Kanter had multiple conversations about her studying the trends in heart attacks at KPSC.

"There had been a lot of work done around hypertension control and aggressive treatment of lipids—identifying patients with high cholesterol and treating them with statins. With that work, we hoped to see our heart attack rates go down," she said.

Dr. Reynolds worked with physicians including Dr. Scott, and researchers Stephanie Reading, PhD, MPH, and Gloria Chi, PhD, MPH, among others.

Heart attack rates differ by sex and ethnicity

In addition to assessing the trends in the rate of heart attacks at KPSC, researchers also examined how the rates of heart attacks differed by race/ethnicity, age, and sex. The work has been presented at several conferences and is being submitted for publication.

Dr. Reading's research focused on the age and sex-specific differences in incidence rates of acute myocardial infarction, commonly known as heart attack, from 2000 to 2014. Findings included:

- Declines in acute myocardial infarction incidence rates across all age groups and in both sexes.
- The most dramatic declines were in the incidence rates of STEMI (ST-Elevation Myocardial Infarction), the most severe form of myocardial infarction.
 - Researchers found relative declines in women from 67.9% to 73.7% and in men from 59.4% to 69.0% over 3 age groups.
 - Non-STEMI also showed consistent relative declines, with men declining between 10.9% and 41.6% and women declining between 16.1% and 30.7% over 3 age groups.

"It was great to see that rates of all types of heart attacks decreased," Dr. Reading said.

Dr. Chi noted that the large KPSC membership allowed researchers to look at a more diverse population than previous research. In addition to non-Hispanic blacks and non-Hispanic whites, researchers assessed trends in Hispanics, and Asians or Pacific Islanders.



Dr. Ronald Scott, Ema Montañez

"The work showed that the rates of heart attacks declined substantially in all racial/ethnic groups," Dr. Chi said.

Research is a team effort that benefits patients

The results were reassuring to Jeffrey Cavendish, MD, the regional co-lead for cardiovascular disease for SCPMG. He felt the work showed that what he was doing was making a difference. He lauded the research as a true team effort between physicians and researchers, who "took the ball and ran with it."

He added that there is a great advantage for patients being treated in organizations like Kaiser Permanente that focus on high-quality patient care and participate in research.

"Research makes us better doctors and health care providers and improves the overall practice of medicine," Dr. Cavendish said.

And that research is shared both inside and outside of Kaiser Permanente. For instance, Dr. Scott meets regularly with Kaiser Permanente's national cardiovascular leaders to exchange best practices, share research, and update guidelines. He collaborates with a national group to improve cholesterol decision support across the country, and he works with several groups in Los Angeles County to improve cardiovascular preventive care.

"A lot of cardiovascular disease is preventable," Dr. Scott said. "We use all of the different tools we have to drive the rates down. We want our patients, and the people in our communities, to live long and healthy lives. That's why we are here."



Gloria Chi, PhD, MPH

EIS officer takes 2-year post at Kaiser Permanente

"Having an Epidemic Intelligence Service officer assigned to Kaiser Permanente provides unique opportunities for the EIS program to collaborate with a nongovernmental health organization to train tomorrow's public health leaders."

— Byron Robinson, PhD, Centers for Disease Control and Prevention

As a high school student, Gloria Chi competed in science fairs and worked on genetic epidemiology in a cancer lab. Those early experiments cemented her love of science.

Today, Dr. Chi has embarked on a different sort of experiment. In 2016, she embraced the challenge of being the only Epidemic Intelligence Service (EIS) officer stationed at a nongovernmental agency: Kaiser Permanente's Department of Research & Evaluation.

The Centers for Disease Control and Prevention's EIS officers are known for stepping up at a moment's notice to investigate public health threats in the United States and around the world. Most spend the 2-year training program stationed at CDC headquarters in Atlanta. Others work in state and local health departments across the country.

"Having an EIS officer assigned to Kaiser Permanente provides unique opportunities for the EIS program to collaborate with a nongovernmental health organization to train tomorrow's public health leaders," said Dr. Chi's CDC supervisor Byron Robinson, PhD.

Discussion about post began a few years ago

The idea of placing an EIS officer at Kaiser Permanente first came up several years ago. Diana M. Bensyl, PhD, and Steven Jacobsen, MD, PhD, senior director of research at R&E, discussed it after attending an American College of Epidemiology board meeting. At the time, Dr. Bensyl was overseeing the EIS program for the CDC.

"As we talked about what Kaiser Permanente could offer, placement of an EIS officer seemed an ideal way to begin to blend traditional epidemiology training with the opportunity to work with a group that was already fully tackling 'big data,'" said Dr. Bensyl, who now works for the CDC's Emergency Response and Recovery Branch.

Before Dr. Chi completed her first year at R&E, she had studied the trends in hospitalized heart attack rates by race/ethnicity (see article on pages 7 and 8) as well as lead testing and elevated blood lead levels in children ages 6 to 30 months. She also assessed how accurately ICD-10-CM diabetes diagnosis codes in Kaiser Permanente HealthConnect® can be used to distinguish between type 1 and type 2 diabetes. In addition, she assisted the Los Angeles County Department of Public Health on several investigations.

A unique training opportunity

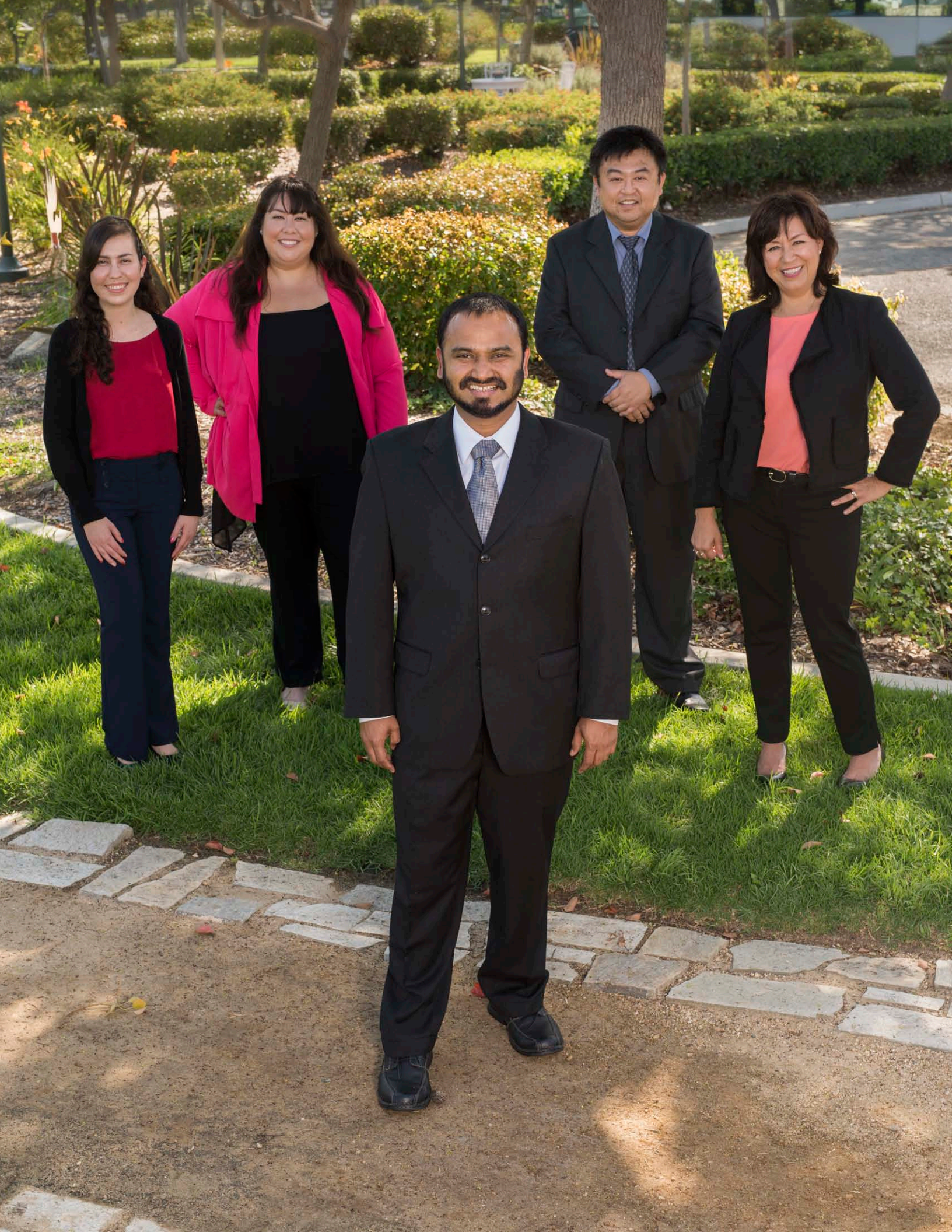
"Working with epidemiologists and other researchers at Kaiser Permanente is great training for an EIS officer," said Dr. Chi's primary supervisor at R&E, Jean Lawrence, ScD, MPH, MSSA. "Here she has many opportunities to do research based on her interests, which may include working with electronic health records, starting her own cohort, and collaborating with researchers on ongoing studies."

Dr. Chi's secondary supervisor at R&E, Sara Tartof, PhD, MPH, noted that having Dr. Chi stationed at Kaiser Permanente puts R&E "on the map in a public health forum."

Dr. Lawrence and Dr. Tartof are both EIS alumni.

Dr. Chi hopes that as an EIS pioneer in a nongovernmental agency, she can prove the value of collaboration between the public sector and research partners such as Kaiser Permanente.

She noted, "There's increasing recognition that public health and clinical medicine can work collaboratively to better patient health and population health."



Early-stage breast cancer

Research tools reveal outcomes for women's quality of life

When women learn that they have an early form of breast cancer called DCIS (ductal carcinoma in situ), they often consider 2 surgical treatment options: removal of the breast, called mastectomy, or removal of the tumor and tissue around it, referred to as a lumpectomy.

However, little has been known about how DCIS affects the patients. What did it cost them in terms of lost work and medical expenses? How did it affect their employment, relationships, and overall quality of life?

A study team at the Kaiser Permanente Southern California Department of Research & Evaluation decided to find out. The team was led by Research Scientist Aniket Kawatkar, PhD, MS, who focuses on health care economics and compares the effectiveness of treatment options.

Initial findings answer treatment question

Some of the first findings in 2016 showed that among women at KPSC, there was no difference in breast cancer recurrence and progression between the women who chose mastectomy and those who chose lumpectomy. This answered one of the biggest questions in women's minds when they receive the DCIS diagnosis, as well as in the minds of their physicians when recommending treatment. The research has been presented at conferences and was submitted for publication in 2017.

Why women chose the more invasive mastectomy over the less invasive and less expensive lumpectomy was another question.

"Is it fear of progression? Is it because their friend or sister had a successful mastectomy?" Dr. Kawatkar asked. "If we can understand the decision-making process of our patients, we can help Kaiser Permanente come up with a better treatment plan."

Previous page: Janet Mora Márquez, Erika Estrada, Dr. Aniket Kawatkar, David Yi, Cecilia Portugal

Health economics research improves value

Health economics research focuses on improving the value of medical care. Typically, researchers analyze the patterns of use for health care services and medications, the costs, and the outcomes for patients and clinicians.

"Kaiser Permanente strives to deliver high-quality, affordable health care," said Steven Jacobsen, MD, PhD, the senior director of research for the Department of Research & Evaluation. "By considering the economics as well as the outcomes, we can evaluate opportunities we have to reduce costs without sacrificing quality."



Lewei Duan

Interest in treatment options began early

Dr. Kawatkar's interest in the economics of breast cancer began in graduate school at the University of Southern California, where he researched treatment options for women with metastatic breast cancer. Metastatic breast cancer is cancer that has spread beyond the breast to other organs in the body. It is the most advanced form of breast cancer.

In that study, Dr. Kawatkar created a model to determine the cost effectiveness for 2 different chemotherapy regimens for breast cancer while factoring in quality of life and longevity.

"The question was, what is the trade-off between going for additional rounds of chemo versus the quantity of life and quality of life?" Dr. Kawatkar said. "A life lived by a cancer patient is not the same as a life lived by a healthy patient."



Dr. Aniket Kawatkar, Cecilia Portugal, Janet Mora Márquez, David Yi

After he joined the Department of Research & Evaluation, he learned the nonprofit research funding agency Patient-Centered Outcomes Research Institute had an interest in DCIS, which can be a precursor to metastatic breast cancer. He applied. Based on the reviewers' comments, Dr. Kawatkar realized his application would have a better chance of funding if he conducted a pilot study first. So, this work began. Not only have the results been gratifying, but "now that we have this cohort, we will apply again," he said.

Treatment can prevent cancer progression

DCIS is a form of breast cancer in which abnormal cells are contained within a woman's milk ducts. It is noninvasive, but without treatment the abnormal cells may progress to invasive breast cancer. Surgery, with or without radiation therapy, is typically recommended to treat DCIS. With treatment, the prognosis is excellent.

"One of the key questions to look at when a woman has DCIS is, what are her treatment options?" Dr. Kawatkar said. "It's not malignant. The cancer is still in the ductal cells, but it can spread."

The more aggressive mastectomy procedure costs the patient more in terms of lost time at work for recuperation. Patients also may face additional surgery for reconstruction and a higher risk of infection. Concern over the cancer spreading, though, can lead some women to choose mastectomy over lumpectomy.

Tools included statistical models and surveys

Dr. Kawatkar and his team began the research by developing the cohort with information from the Kaiser Permanente Cancer Registry, the Kaiser Permanente HealthConnect electronic health record, and an online survey. The team sent out 3,092 surveys to female KPSC patients diagnosed with DCIS between 1998 and 2014. About 1,400 women filled out the surveys and returned them—even though there were 70 to 100 questions per survey. Nearly 1,000 women completed the entire survey.

To evaluate the effectiveness of lumpectomy versus mastectomy, biostatistician Lewei Duan, MS, applied Instrumental Variables, a statistical approach used to estimate causal relationships. It is popular in economics research but not often used in health research.

This approach allowed Duan to better determine the causal effect of surgical type on probability of cancer recurrence and progression.

"To use a method such as Instrumental Variables was a very exciting experience for me," Duan said. "We were able to obtain a consistent estimate for a causal relationship in a clinical setting."

"Our research can help patients decide what choice to make regarding DCIS. They can make a more informed decision regarding their body and body image. That's something that could affect their quality of life."

— Lewei Duan, MS

Creating a survey to capture decision-making

Research Associate Janet Mora Márquez did much of the work to create the survey. Her job involved finding questions that had been validated by previous research to show they were effective.

"We did a lot of research to try to understand what questions would best capture the kind of information we wanted," Mora Márquez said. "The focus was on questions that dealt with the women's quality of life after their diagnosis and treatment."

One of the more unusual parts of the survey was including a Decisional Conflict Scale to measure perceptions of decision uncertainty, clarity of values, and decisiveness in decision-making, said Cecilia Portugal, MPH, a senior research project manager.

"One of the questions we looked at was how informed the members felt they were when they made the decision," Portugal said. "Another looked at how clear and certain they were about the decision they made."

A major finding was that women under 50 years of age with DCIS reported more decisional conflict about their treatment than older women.

Portugal made 2 poster presentations in 2016 on the differences in decisional conflict about treatment of DCIS by age, race, and ethnicity: one at a cancer conference at the Kaiser Permanente Los Angeles Medical Center, and one at the annual meeting of the American Public Health Association in Denver.

Survey gets positive response from patients

Research Associate Erika Estrada managed patient outreach: contacting the members and following up if they had issues on the survey. The day after the survey was emailed, Estrada arrived to work to find 30 messages on her phone.

"Women were leaving messages about how they would do anything they could to help," she said. "They appreciated the type of care they received and the opportunity to share their experience."



Janet Mora Márquez

When Estrada talked with the women, she heard a strong, clear message that the breast cancer survivors wanted to help others facing the same situation. She and other team members talked to several hundred people on the phone and answered many emails.

Portugal was one of the team members involved in follow-up calls to patients.

"I didn't talk to one person who was unhappy with their cancer care at Kaiser Permanente," Portugal said. "They told me, 'I had the best breast cancer care' and 'I had such a great doctor and the nurses were wonderful.' People were really happy with their care."

Researchers provide answers for patients

Providing answers that could help women and physicians was gratifying, Duan said.

"Our research can help patients decide what choice to make regarding DCIS. They can make a more informed decision regarding their body and body image. That's something that could affect their quality of life," Duan said. "Kaiser Permanente wants people to have a good quality of life. And that doesn't have to cost more."

Telestroke

Creating new tools to better treat stroke patients

Stroke is a major cause of death and a leading cause of serious long-term disability in the United States.

When it comes to strokes, time to treatment matters. Each minute without treatment can mean the death of 2 million neurons in the brain.

Past research has shown U.S. hospitals have not consistently delivered the only FDA-approved treatment for acute ischemic stroke, a clot-dissolving treatment called Tissue Plasminogen Activator, or tPA. The treatment breaks up the stroke-causing clots by thinning the blood, but can be risky and its success depends on how quickly patients receive it.

Navdeep Sangha, MD, an assistant chief of neurology at the Kaiser Permanente Los Angeles Medical Center,

remembers, “I was really getting disheartened by all the cases that we were getting from other hospitals in which patients were not being adequately treated with intravenous tPA soon enough. As a stroke physician, it was heart wrenching.”

Research uncovers variations in stroke care

At the same time, Adam Sharp, MD, MS, an emergency physician and a research scientist with the Department of Research & Evaluation, was working with colleagues to understand patient and facility variables contributing to the quality of stroke care for Kaiser Permanente Southern California members.

Dr. Sharp and his colleagues found there were differences in stroke care among KPSC hospitals.



Dr. Navdeep Sangha, Dr. Adam Sharp (monitor image: Leah Sanderson, Ivan Victoria, Liliana Hawken)

Physicians apply technology to treatment plan

Dr. Sangha knew something had to change to get immediate specialized care to stroke patients regardless of where they were treated. He and his colleagues applied some of the technology being used by rural hospitals to develop a video conferencing system for KPSC called Telestroke.

Telestroke allows an emergency department physician to contact a neurologist 24 hours a day from any KPSC hospital. The neurologist can see the patient on their computer monitor, review the charts, determine if tPA is appropriate, and assist in administering tPA if needed.

Dr. Sharp, the scientist, heard about KPSC's efforts to create a Telestroke system. "Telestroke made sense from both an efficiency and a quality perspective," Dr. Sharp said. "So, we asked if we might be able to build in an evaluation arm as we rolled this out."

In summer 2013, Kaiser Permanente's Telestroke program started as a pilot at the Kaiser Permanente Woodland Hills Medical Center. Dr. Sangha and others donated their time to be on call for other hospitals. Improvements were immediate and the decision was made to expand to all KPSC medical centers.

From putting the new training process in action, changing the flow of responsibility for reading tests, rewriting manuals, and everything else involved, implementing Telestroke was a "tour de force," said Todd Sachs, MD, regional medical director of Operations, Southern California Permanente Medical Group.

"This is a great example of the KP Promise: improving quality for members and improving the access to medical care," Dr. Sachs said. "That is always our true north."

Stroke care can be immediate with Telestroke

Now when a stroke patient goes to the emergency department, the physician pages an on-call Telestroke neurologist who may be at home or in the office. If they are in the car, they pull over on the side of the road, said vascular neurologist William P. Neil, MD, the San Diego Medical Center Stroke Program director.

"We have access to the CT scan, all the labs, and past medical history. And on the video, we can see the patient," Dr. Neil said. "We've got everything we need right on our laptops."

Research shows Telestroke is effective

As Telestroke rolled out to all the KPSC medical centers from August 2013 to December 2014, the use of tPA for patients with stroke increased by 73%.



Dr. Navdeep Sangha, Dr. Adam Sharp

The study Dr. Sharp led, which included co-authors Dr. Sangha and Dr. Neil, was published in 2016 in *The Permanente Journal*. It showed:

- The use of tPA among acute ischemic stroke patients increased from 6.3% before Telestroke implementation to almost 11% after implementation.
- Overall bleeding complications were slightly lower after Telestroke was implemented (5.1% versus 4.9%).
- Two key quality measures improved: Median time for a patient to receive diagnostic imaging was reduced from 56 to 44 minutes, and the time to tPA administration for those eligible was reduced from 66 to 55 minutes.

Dr. Sangha said that being able to reference a study of our own patients has allowed the program to roll out even more effectively because physicians understand how well it works.

"In 2016, our tPA percentage utilization was above 20%," Dr. Sangha said. "The national average is about 6%."

Telestroke saves lives and livelihoods

At the Los Angeles Medical Center emergency department, Dr. Sangha no longer sees patients transferred from other KPSC medical centers in need of immediate stroke care. He believes Telestroke has saved lives, and livelihoods.

"Most people don't die from strokes. What happens is that they end up being severely debilitated," he said. "We're saving their livelihoods, and so they are normal, functional people who get to walk their daughters down the aisle, or be at their grandchild's graduation."

Reducing hospital readmissions

Research is a tool to analyze the option of post-hospital visits

Nationally, nearly 1 in 5 patients discharged from a hospital is readmitted within 30 days. Kaiser Permanente Southern California has long worked toward reducing readmissions. A few years ago, leaders tried recommending that clinicians schedule special post-hospital visits within 7 days after their patients were discharged. The visits would focus entirely on patients' recovery from their recent hospital stay, tests that needed to be followed up on, and medications they should be taking.

But the visits were hard to schedule and difficult for physicians to fit into their already packed schedules. The idea didn't take off.

"Physicians raised a lot of questions regarding the value and timing of the post-hospital visit," said Dan Huynh, MD, regional assistant medical director, Hospital Quality.

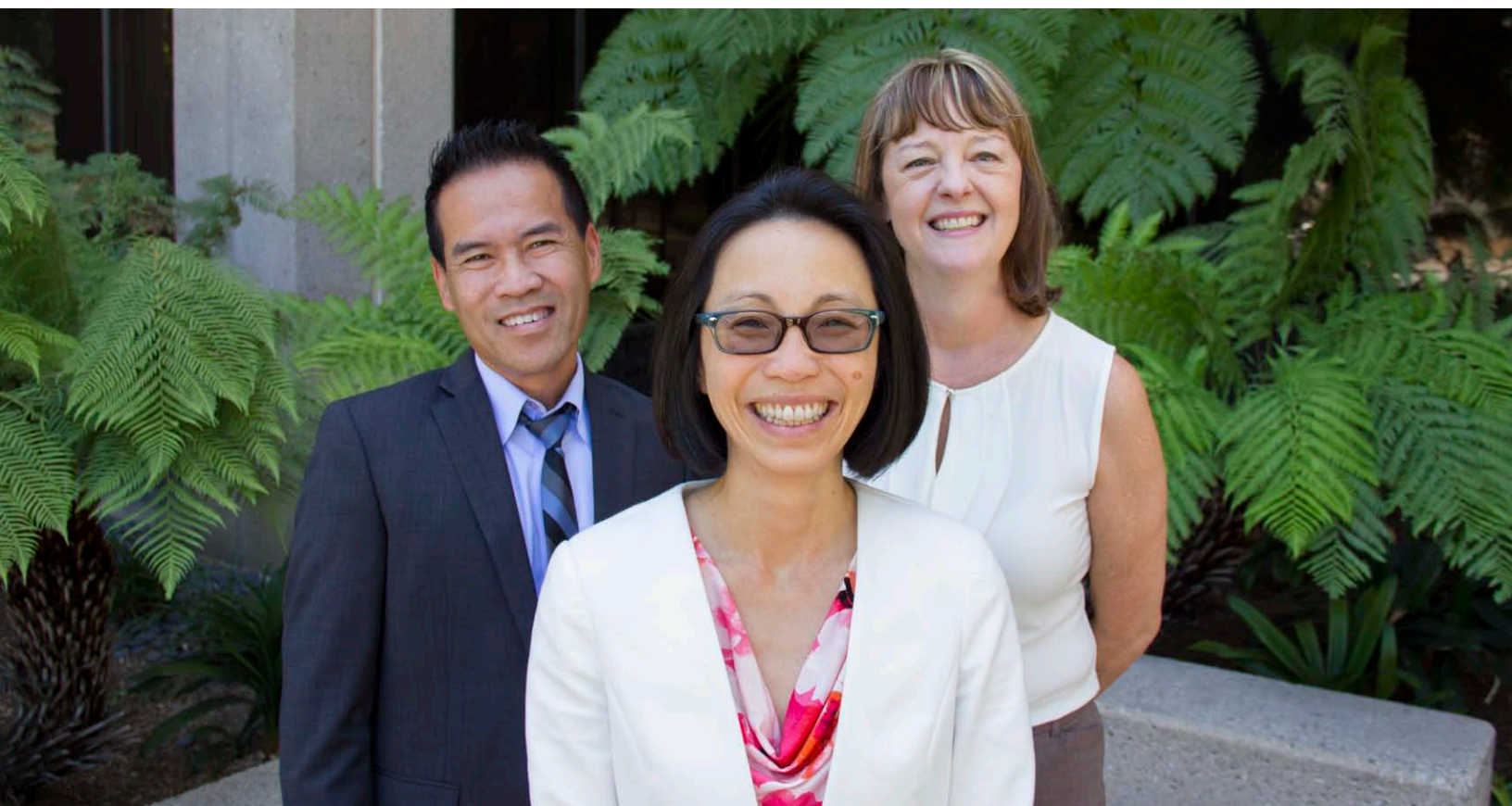
"Physicians base their work on evidence but we didn't have the data to show the benefit of these visits. We said, 'We need a study.'"

The Department of Research & Evaluation stepped in.

Research partners with doctors to improve care

Kaiser Permanente is a learning health care organization that uses research to improve the lives of its members and the communities in which they live. KPSC's research scientists find answers to national health care questions, as well as work directly with some of the region's 7,000 physicians to improve care in practical ways.

The post-hospital visits, or POSH visits, seemed to be a good way to improve care. However, the few small studies done in other settings showed mixed results.



Dr. Dan Huynh, Dr. Huong Nguyen, Heather Watson

POSH introduced to help heart failure patients

Originally, post-discharge provider visits at KPSC were a strategy to improve heart failure outcomes, said Sandra Koyama, MD, an adult primary care physician at the Kaiser Permanente Baldwin Park Medical Center.

"We noticed that many patients had problems with medications after discharge," Dr. Koyama said. "Patients had duplicate medications, did not pick up their medications, or were confused by the instructions and didn't know what to take. Additionally, some patients weren't confident about how to care for themselves after discharge, or weren't taking the right medications."

As the regional physician co-lead for heart failure, Dr. Koyama was interested in making sure patients' needs were met with smooth hand-offs from hospital to home. Part of that work involved a focused visit with a personal physician within a week of being released from the hospital. This seemed to make the biggest difference for members with heart failure, she said.

The Readmission Steering Committee rolled out the POSH visits to all patients who were at high risk of being readmitted, based on the experiences with heart patients and findings from current literature.

Scientists interested in answering questions

Huong Q. Nguyen, PhD, RN, was hired by the Department of Research & Evaluation in 2012. She quickly developed close partnerships with clinical colleagues. Together, they prioritized the POSH visit evaluation as part of a larger national study on care transitions (Project ACHIEVE) for which she is the KPSC site lead. The work was funded by the Patient-Centered Outcomes Research Institute.

The study examined the electronic health records of more than 71,000 Medicare Advantage patients who were discharged from KPSC hospitals from 2011 through 2014. The researchers found that patients who had a POSH visit with a primary care clinician within 7 days of discharge to homes were:

- 12% to 24% less likely to be readmitted than those who did not complete a visit.
- 28% less likely to experience hospital readmission than those completing any other type of outpatient visit.

"The study highlighted the value of both the routine and tailored POSH visits in ensuring continuity of care," said Ernest Shen, PhD, a research scientist biostatistician at KPSC. Dr. Shen was the lead author on the *JAMA Internal Medicine* article published in November 2016.



Alfred Mikaru, Dr. Sandra Koyama

"By bringing together the clinical side and the research side, we can accomplish what's really important to our health system and the larger medical community."

— Huong Q. Nguyen, PhD, RN

POSH visits increased even more after study

Scheduling and completion rates for POSH visits have continued to improve, said Heather L. Watson, MBA, a practice specialist for the Southern California Permanente Medical Group's Complete Care Support Program's readmission reduction effort.

"Our POSH appointment scheduling and completion rate has significantly improved over the last 2 years," Watson said. "This is a result of us having the research to show that it makes a difference."

Dr. Nguyen said the POSH work is a great example of how the Department of Research & Evaluation leverages external funding to address internal questions that ultimately informs care delivery and benefits patients both inside and outside of Kaiser Permanente.

"This really is a virtuous model of research-operations partnership," Dr. Nguyen said. "By bringing together the clinical side and the research side, we can accomplish what's really important to our health system and the larger medical community."



Clinician investigators

On the front lines of patient care and research

Cardiac surgery patients travel to the Kaiser Permanente Los Angeles Medical Center from all parts of the Southern California Region. That can mean long-distance travel for follow-up care. Raymond Chen, MD, DPhil, a cardiac surgeon at the Los Angeles Medical Center, wondered if there was a better way.

"If a patient comes from Lancaster, that can take several hours," he said. "Just walking from the parking lot is hard if you are already short of breath."

Video conference visits struck Dr. Chen as an enticing alternative. He hypothesized that, beyond convenience, video visits might reduce hospital readmissions.

Wound infection and heart failure are two of the top causes of readmission after cardiac surgery. Surgeons can spot early signs of complications during follow-up visits. But traveling for an in-person visit can be difficult for patients. And telephone consults don't provide enough visual information.

"A patient may tell me their wound is a little red. But they can't always describe it well," said Dr. Chen. "It is really helpful to be able to see the wound directly."

Dr. Chen regularly communicates with family using a video chat app on his smartphone. It occurred to him that he might be able to use the same tools in his practice.

"The technology is so prevalent, and it works so well," he said. "Why not put that to use for medical care?"

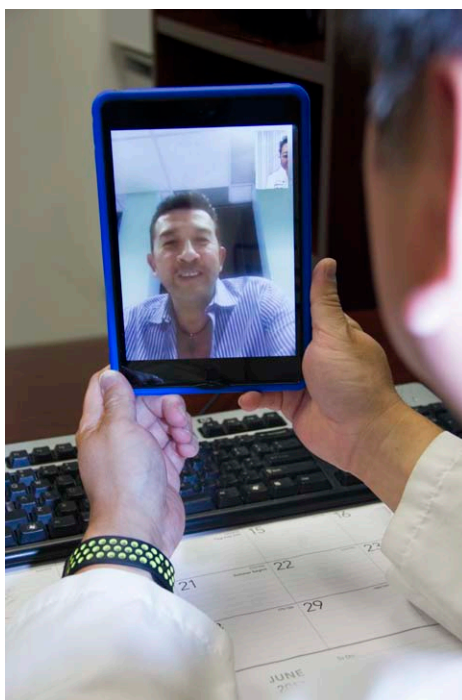
Previous page: Dr. Raymond Chen

Above: (tablet image: Carlos Bohorquez), Dr. Raymond Chen

Clinician Investigator Program launches

The Clinician Investigator Program, which launched late in 2015, gave Dr. Chen the time to explore his question.

"One of the big challenges for clinicians who want to do research is carving out the time," said William Towner, MD, who heads the Southern California Division of Clinical Trials Research and developed and oversees the Clinician Investigator Program. "This program gives them extra time to devote to research."



Selection for the program is highly competitive. More than 50 physicians applied when the program first called for candidates in fall 2015. Dr. Chen was one of the first 4 chosen.

A question becomes a trial

Time was just what Dr. Chen needed to turn his question into a randomized trial. Within 6 months, nearly 600 patients had been recruited.

"When a patient asks for a video conference call, I call them back the same day," said Dr. Chen. "The video images are amazingly clear. I can see how incisions are healing. I can see how my patients are breathing."

Seeing his patients at home also gives Dr. Chen a sense of their activity level.

"If I video conference with a patient 2 days in a row, I might see that he hasn't moved," he said. "That gives me a chance to encourage him to get out of bed, to walk or just take a few steps. That's very important to recovery."

Is there a decrease in readmissions?

"We're still analyzing the data, so we don't know yet," said Dr. Chen. "Anecdotally, I would say patient satisfaction is improving. Patients love that they don't have to make an appointment, drive here, park, and wait to be seen."



Dr. Devansu Tewari, Dr. Michael Batech

Opportunity in an integrated system

Women with ovarian cancer navigate a complex path from diagnosis through treatment. A primary care physician or gynecologist may be the first to note symptoms, prompting a referral to a specialist. Once a patient is diagnosed, treatment almost always includes surgery. It can also involve chemotherapy or radiation therapy.

Devansu Tewari, MD, MBA, a gynecologic oncologist at Kaiser Permanente Orange County, firmly believes patient outcomes are linked to timely care.

"Ten years ago when I joined SCPMG, the patients had large-volume cancers that required more complicated procedures and longer surgeries," he said. "These cancers are considered to grow faster than others, so I set a target to see these patients quickly after referral and target surgery within 2 weeks. Subjectively, I started noticing that the volume of cancer and complexity of surgery started to decrease."

While exchanging data with colleagues, he realized others were taking similar steps to improve timeliness of care. He also realized that there was sparse evidence on what constituted timely care for ovarian cancer.

Dr. Tewari became interested in examining the relationship between outcomes and improved access to gynecologic oncologists and surgery. This spurred him to apply to the

Clinician Investigator Program. He was accepted to the program in the fall of 2015, along with Dr. Chen.

"My goal is to break down the entire care pathway, from an abnormal imaging exam that prompts a referral to the gynecologic oncologist to the time to surgery, recovery, and initiation of chemotherapy," he said.

In addition to providing time for research, the program offers biostatistician support. Dr. Tewari teamed up with Michael Batech, DrPH, a biostatistician in the Department of Research & Evaluation. Together, they are working to map out the timeline for care and analyze patient outcomes throughout the care pathway for ovarian cancer.

Findings from this research could have benefits to the community. Dr. Tewari, who sits on the National Quality and Outcomes Committee for the Society of Gynecologic Oncology, often hears frustration from his colleagues from other institutions about gaps in what they know about their patients' histories or outcomes.

"University hospitals and cancer centers don't always have detailed records of what happened with their patients before they were referred," he said. "They also have challenges tracking their patients after treatment."

An integrated care delivery system with extensive electronic health records, like Kaiser Permanente, offers distinct advantages. In addition, KPSC members have

“My goal is to break down the entire care pathway, from an abnormal imaging exam that prompts a referral to the gynecologic oncologist to the time to surgery, recovery, and initiation of chemotherapy.”

— Devansu Tewari, MD, MBA

access to gynecologic oncologists and health care coverage, which are often cited as barriers to care for women with ovarian cancer care nationally.

“Here we have everyone under one tent—the hospital, the different departments, and the doctors connected under one digital platform,” he said. “We can provide insights that few other places in the country can.”

A portfolio of ideas from practice

The opportunity to practice in an integrated care system beckoned to Hui Xue, MD, MMSc. In 2014, Dr. Xue left a more traditional academic role to join the Nephrology Department at Kaiser Permanente’s San Diego Medical Center.

The move meant taking on a busy clinical practice. But Dr. Xue has remained focused on building a robust clinical research portfolio alongside her clinical practice.

In her application to the Clinician Investigator Program, Dr. Xue outlined 4 proposed projects, spanning observational studies to clinical trials. Though diverse in topic and methodology, her research ideas sprang from a common motivation: the desire to improve survival rates and quality of life for patients with advanced and end-stage kidney disease.

Shortly after joining the program, Dr. Xue launched her first study. It focused on survival and outcomes among people ages 75 years and older with advanced kidney disease. The project arose from her own long-standing research interests but also reflected the curiosity of her nephrology colleagues.

“They had a wealth of study questions,” she said. “But they didn’t have the experience in study design to deliver a publishable product.”

Dr. Xue has been fascinated by science since childhood. She started working in a lab at age 17, and in medical school, she received a Howard Hughes fellowship in cell biology. During her nephrology fellowship, Dr. Xue earned a master’s degree in clinical science at Harvard Medical School.

That background helped Dr. Xue turn her colleagues’ questions into a scientific study. She recently presented preliminary findings to the KPSC 2017 Nephrology Symposium. She is now working on a manuscript.



Dr. John Sim, Dr. Hui Xue

In the meantime, Dr. Xue is steadily building her research portfolio. Her second project was a funded clinical trial at the Los Angeles Medical Center. She is in discussion with an industry sponsor for a third project, and is working to get internal funding for a fourth.

She also recently collaborated with Kristi Reynolds, PhD, MPH, director of epidemiologic research at R&E, on a multi-site research project cooperative agreement. Even if the grant is not funded, Dr. Xue found this collaboration to be a valuable learning experience.

“Dr. Reynolds has the experience with leading a project involving recruitment and I brought the experience with clinical management,” she said. “That’s a perfect partnership, when a clinician investigator and a more traditional scientist work together.”

Insights to improve quality programs

John Sim, MD, a nephrologist at the Los Angeles Medical Center, sees research as an opportunity to have a bigger impact on health and quality of care.

“Caring for my patients’ health is my main responsibility,” said Dr. Sim, who was also one of the first group of clinician investigators. “Research gives you an opportunity to improve patient care beyond what you can do on your own, and to improve care for patients beyond your own panel—and even your own organization.”



"Caring for my patients' health is my main responsibility. Research gives you an opportunity to improve patient care beyond what you can do on your own, and to improve care for patients beyond your own panel—and even your own organization."

— John Sim, MD

Dr. Sim's recent research has focused on a patient safety program called the Creatinine SureNet program. The program follows up on abnormal creatinine tests, which can indicate kidney disease.

In an initial study published in *The American Journal of Medicine*, Dr. Sim and his co-authors described the Creatinine SureNet program and documented its impact. They also noted potential areas of improvement, prompting a follow-up study.

"We found that the equation we're using to estimate the kidney function is probably overestimating the number of people who need follow-up," he said. "Another commonly used equation would have captured about 44% fewer patients."

The alternate equation, the Chronic Kidney Disease Epidemiology Collaboration equation (CKD-EPI), has been shown to be more appropriate in screening applications than the equation that was used by the SureNet program (the Modification Diet in Renal Diseases, or MDRD equation).

Unnecessary follow-up can take a psychological toll on patients, who may worry that they have chronic kidney disease. Tracking a smaller group of patients would also mean fewer resources.

Findings of the study were published in *The Permanente Journal* early in 2017. The SureNet program is in the process of adopting the CKD-EPI equation, according to Mark Rutkowski, MD, the chairman of the Regional CKD Committee and a nephrologist at the Kaiser Permanente Baldwin Park Medical Center.

"The study helped build the case for making the change in the estimating equation," said Dr. Rutkowski, who was a co-author on both papers.

The study also found that even among patients diagnosed with chronic kidney disease, the rate of testing urine for protein was low.

"It also pointed out the need for a more effective process for obtaining urine albumin or protein measurements in our patients," he said.

"We had assumed that the usual batch lab program for members with chronic kidney disease, which includes a urine albumin test yearly, would be sufficient. However, this study showed us that this process isn't sufficient to get timely urine albumin or protein measurements for members who are newly identified as having CKD," Dr. Rutkowski said.

Physician research as a tool for change

SCPMG's leadership believes our physicians can make a unique contribution to research.

"When our physicians are involved, it helps us make sure our research addresses problems that have an impact on practice," said Michael Kanter, MD, regional medical director of Quality and Clinical Analysis, SCPMG. "They see the issues, and they know where the gaps are in the literature. They can also envision how to change practice with the results of the study."

SCPMG physicians have previously had informal pathways to participate in research. Those include running clinical trials, applying for funding through the Regional Research Committee, or mentoring residents and fellows during their research projects.

The Clinician Investigator Program provides a more formal pathway for clinicians to integrate research into their clinical careers.

"The support from regional and medical center leaders and our SCPMG board has been critical to getting this program going," said Dr. Towner.

A second group of 4 joined the Clinician Investigator Program late in 2016: Casey Ng, MD, a urologist at the Panorama City Medical Center; Navdeep Sangha, MD, a neurologist at the Los Angeles Medical Center; Emily Whitcomb, MD, MAS, a urogynecologist at Kaiser Permanente Orange County; and Bechien Wu, MD, MPH, a gastroenterologist at the Los Angeles Medical Center. For more on their research interests, see pages 52 and 53.

"Our clinician investigators are hitting the ground running," said Dr. Jacobsen. "The extra time has helped them bring projects to completion or move them along at a much quicker pace. That's a tangible measure of success. With continued support from leadership, I am optimistic this success will continue to grow."

Previous page: Dr. John Sim, Dr. Hui Xue



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Kaiser Permanente Research Bank

A tool for the future of health

A dozen men and women gathered in a bright conference room in downtown Los Angeles, poring over slides with colorful pie graphs and detailed demographic tables. The slides displayed results of recent efforts to recruit participants for the new Kaiser Permanente Research Bank.

The KP Research Bank is being built to serve as a long-term research resource that involves 7 Kaiser Permanente regions, including Southern California. It is designed to provide infrastructure to conduct studies that may help scientists better understand how people's health is affected by their genes, behavior, and the environment.

The audience that night was the KP Research Bank's Southern California Community Advisory Board. Board members peppered the research team with questions and suggestions. Had researchers tried text messaging to potential recruits? Had they considered returning genetic results to participants?

A resource for the long term

Researchers will use DNA and other health information provided voluntarily by Kaiser Permanente members to study how genetic and environmental factors affect health. Ultimately, they hope their studies will provide new clues as to how to diagnose, treat, and prevent certain diseases.

"This is really an investment in the future," said Deborah Rohm Young, PhD, MBA, the Southern California site principal investigator for the KP Research Bank. "The KP Research Bank will help push the envelope with the precision medicine initiatives going on across the country."

Recruitment for the KP Research Bank is a massive endeavor. Nationwide, researchers aim to recruit 500,000 Kaiser Permanente members. Southern California's share of that target is 102,000.

The KP Research Bank has a strong emphasis on working with diverse communities. Many racial and ethnic groups have historically been understudied by medical research, leaving questions about the applicability of findings across diverse populations.

Previous page: Melissa Preciado, Krunal Patel, Pari Patel, Devi Patel

"Other institutes may have similar initiatives, but the KP Research Bank is striving to include more members from diverse race and ethnic groups," said Research Scientist Reina Haque, PhD, MPH, who is affiliated with the KP Research Bank's Access Review Committee. "That is an important factor that distinguishes the KP Research Bank from others."



Melissa Preciado, Hector Gutierrez, Rica Ann Dela Cruz

"My hope is that we take research and use it to catalyze community health, and improve the lives of communities throughout the region and nationally."

— Hector Gutierrez, Community Advisory Board member

Connections with diverse communities

Recruiting participants from a broad cross section of racial and ethnic groups can be challenging, even in a diverse region like Kaiser Permanente Southern California.

Community Advisory Board members provide essential insights into how to connect with diverse communities. Most of the board members in Southern California are grassroots community leaders. There is also a national board that brings together community members from all Kaiser Permanente regions.



Miki Nguyen, Louie Farnacio, Dr. David Quam

Melissa Preciado, MPH, is the coordinator for the Southern California board, and helps coordinate the national board. She sees enormous value in the board members' feedback.

"As researchers, we can get disconnected with what the community has to say. Our board members give us a true perspective of the people we want to reach," she said. "Ultimately, we are doing this for the community. Therefore, we should do it with sensitivity to the needs, beliefs, and perceptions of the community."

Individual members have varied reasons for joining the board. But a common thread is their optimism that the difference the KP Research Bank, and health research more generally, will make in the future.

Community Advisory Board member Hector Gutierrez, a program officer with First 5 Los Angeles, believes in the potential of research to improve health for diverse communities.

"The goal is for all communities to be healthy, right? Your ZIP code shouldn't determine your health outcomes," he said. "My hope is that we take research and use it to catalyze community health, and improve the lives of communities throughout the region and nationally."



Miki Nguyen, Robert Rabot

“By helping to identify, intercept, and process suitable samples for the KP Research Bank, we can both answer the pressing clinical questions for which today’s tests are ordered, and solve clinical research questions and develop new tests to improve Kaiser Permanente care into the future.”

— Darryl Palmer-Toy, MD, PhD

The challenge of specimen collection

Before recruitment could begin, the project team had to build the infrastructure to support it. Collecting a massive number of specimens required new strategies and tactics.

The KP Research Bank is not the first initiative in Southern California to gather large quantities of genetic specimens. The Research Project on Genes, Environment and Health (RPGEH), was active from 2012 to 2015. The project team gathered saliva samples from nearly 36,000 members, using kits that could be sent through the mail.

The KP Research Bank, however, required fresh blood samples. That added a level of complexity. Traditional tactics, such as sending a phlebotomist into the field or asking participants to visit a research office, would have required more time and resources than the team had.

Fortunately, the RPGEH team had foreseen the need for a more scalable approach. Miki Nguyen, MPH, then the RPGEH project manager, had worked to develop special research orders in Kaiser Permanente HealthConnect, the organization’s electronic health record.

“By having these orders in KP HealthConnect, a member could go to a lab at any KPSC facility to get their blood drawn,” said Nguyen. “Because it was for research, they wouldn’t have a copay.”

It took more than 2 years for that idea to become a reality. Nguyen worked closely with the KP HealthConnect team and the KPSC Revenue Cycle team, which helped work through the logistics of suppressing the co-pay on research orders.

Next, the team had to figure out how to get the samples to the national biobank in Berkeley, California.

“We had to make sure samples from the medical center labs could get to the Regional Reference Laboratory,” said Nguyen. “From there, they needed to be processed, packed, and shipped to our storage site in Berkeley.

None of that would have been possible without the support of the regional lab leadership.

“Our SCPMG Regional Reference Laboratories are committed to providing meaningful answers to important clinical questions,” said Darryl Palmer-Toy, MD, PhD, physician director of SCPMG’s Regional Reference Core



Debbie Escobar, Dr. Darryl Palmer-Toy

Laboratories. “Yet, few of the over 15 million samples that pass through our Regional Reference Laboratories each year have been used to their full potential to support SCPMG’s vital research mission.”

“By helping to identify, intercept, and process suitable samples for the KP Research Bank, we can both answer the pressing clinical questions for which today’s tests are ordered, and solve clinical research questions and develop new tests to improve Kaiser Permanente care into the future,” he added.

Medical center by medical center

As the efforts to recruit participants got underway, the Southern California team decided to take it one medical center at a time.

“We felt it was important to engage the local medical center administration, and get their buy-in,” said Nguyen, who is now scientific program manager for the

"The Kaiser Permanente Research Bank is really fundamental to what we stand for and who we are. I strongly believe this is something that could change health outcomes for the future. It will create a healthier tomorrow."

— Cynthia Cifuentes, MBA



Mitra Vasseghi, Rica Ann Dela Cruz

Southern California KP Research Bank team. "Given the size of our team, we can only do that one medical center at a time."

First up was the Kaiser Permanente Panorama City Medical Center. Cynthia Cifuentes, MBA, the medical center's senior director of public affairs, quickly became an ardent champion.

"The KP Research Bank is really fundamental to what we stand for and who we are," she said. "I strongly believe this is something that could change health outcomes for the future. It will create a healthier tomorrow."

Cifuentes and her team partnered with the researchers to develop a robust communication plan. Local champions were identified to encourage their colleagues to learn about the program. Posters and pop-up banners were placed at key entry points of the medical center. Project team members set up in-person recruitment locations near urgent care and at the medical center's farmers market.

After an auspicious start, the KP Research Bank moved on to Kaiser Permanente medical centers in Antelope Valley, Woodland Hills, Anaheim, and Irvine. They aim to reach all KPSC medical centers by the end of 2017.

"The KP Research Bank is tremendous," said Nancy Gin, MD, medical director, Kaiser Permanente Orange County. "Research helps our group remain at the forefront of medicine. This project is just one of the many ways KP models medicine for today and in the future."

Banking the future of cancer research

Cancer research is one of the most promising areas for the KP Research Bank. Genetic and biomarker research is critical to developing personalized medicine for cancer care.

Research Scientist Chun Chao, PhD, MS, a molecular epidemiologist, sees potential to identify genetic risk factors for short- and long-term health effects of different cancer treatments.

"Potentially, we could identify genetic markers that distinguish people who are at high risk for adverse effects of treatment, such as developing febrile neutropenia (fever and low white blood cell count)," said Dr. Chao. "We could also look at genetic predispositions for long-term effects, such as cardiomyopathy after radiation or anthracycline exposure."

"We could also potentially help predict treatment response to different therapies," she added. "For example, circulating tumor cells and cell-free DNA could possibly be used to predict treatment response."

The KP Research Bank recently began recruiting people for a new cancer cohort, using rapid case ascertainment to recruit members shortly after diagnosis.

Research Scientist Kim Danforth, ScD, MPH, worked with the project team and natural language processing specialist Chengyi Zheng, PhD, MS, to refine an algorithm used to identify KPSC members recently diagnosed with cancer.

"They want to get it as close to the diagnosis as possible," she said. "The goal is to identify and enroll them before treatment, so the blood samples are pre-treatment. Treatment may lead to changes in the blood, so it is important to identify markers before treatment begins."

Community Advisory Board member Mónica Alvarado, MS, LCGC, is the manager of KPSC's Clinical Genetics Department. She sees many gaps in knowledge about the role of genes, the environment, and behaviors in cancer and other common health conditions. The KP Research Bank has great potential to shed new light.

"I see it as planting seeds. Some will grow faster, and we'll be able to make discoveries that we can start applying," she said. "It's really like planting a garden of knowledge that's going to help us improve the health of people everywhere."



ACCOMPLISHMENTS + MILESTONES



Selected grants and contracts

Our scientists and clinician researchers lead studies that have potential to change practice well beyond the walls of our organization. Many studies receive external funding from federal agencies and non-governmental organizations. The following is a small sample of newly funded projects that will address important public health questions.

Adolescent and young adult cancer

Do people who have cancer when they are young get the right kind of care after they complete their treatment? A new grant from the National Cancer Institute will help answer that question.

About 70,000 adolescents and young adults receive a cancer diagnosis each year in the United States. These young people not only face risks from their initial cancer, but from its treatment as well. Risks can include second cancers, organ failure, and other serious illnesses.

Adolescents and young people most often survive these cancers. The 5-year survival rate is higher than 80%. But little is known about the care these survivors receive after their cancer treatment.

Kaiser Permanente Southern California researchers will study follow-up and preventive care for these young cancer survivors. They seek to identify gaps in current practice that might be amenable to intervention. Ultimately, the researchers aim to generate evidence that will inform guidelines and improve quality of care for survivors of adolescent and young adult cancer.

Principal investigator: Chun Chao, PhD, MS

Funder: National Cancer Institute

KPSC co-investigator: Erin Hahn, PhD, MPH



Anna Liang, Dr. Chun Chao, Dr. Erin Hahn, Kimberly Cannavale

Aging and breast cancer survival

Better treatments are helping more women survive breast cancer. Survivors, however, may face other health challenges. They are at greater risk for second cancers, face more age-related disorders, and have a lower life expectancy.

Researchers from KPSC and UCLA have teamed up to study whether women who have survived breast cancer age faster than women who have not had cancer. They aim to identify individual factors that contribute to aging in breast cancer survivors.

Two factors the researchers will examine are sleep disturbance and depression. Sleep problems occur in more than half of all breast cancer survivors. Disturbances to sleep are also thought to contribute to a nearly 4-fold increase in risk of depression.

Preliminary data show that sleep disturbance may lead to greater increases in inflammation and telomere erosion. Telomeres are DNA structures that cap the ends of chromosomes and their length is associated with biological aging.

This study will recruit women with no history of cancer and compare them to breast cancer survivors to assess differences in aging. Findings from this study may aid in the development of interventions to target women who are vulnerable to age-related health problems after cancer.

Principal investigators: Reina Haque, PhD, MPH (KPSC), and Michael Irwin, MD (UCLA)

Funder: National Cancer Institute

KPSC co-investigator: Joanne Schottinger, MD

Depression and anxiety during breast cancer

Many breast cancer patients experience psychological distress such as depression or anxiety during their cancer care journey. In fact, up to half of all newly diagnosed patients report distress in the first year of treatment.

Effective treatments for distress include individual or group therapy, health education, and medication. Unfortunately, oncologists may not be aware of the symptoms of distress. Thus, they may not refer patients to behavioral health specialists to address these concerns.

New guidelines recommend that all cancer patients be regularly screened for distress. Oncologists and cancer researchers saw an opportunity to leverage screening tools already available within Kaiser Permanente's electronic health record to pilot screening for cancer patients. The screening tool is now being tested in several oncology departments in KPSC.

Researchers will assess the effectiveness of the tool in improving identification of distress, referrals for services, and outcomes for breast cancer patients. This research will also provide insight into how distress-screening programs can best be implemented to meet the needs of breast cancer patients nationwide.

Shannon La Cava, clinical program director at the Cancer Support Community in West Los Angeles, is collaborating with the KPSC research team. Her clinical expertise and experience as an advocate for breast cancer patients provide valuable insights into the experiences of cancer survivors.

Principal investigator: Erin Hahn, PhD, MPH

Funder: California Breast Cancer Research Program

KPSC co-investigators: Michael Gould, MD, MS; Brian Mittman, PhD; and Joanne Schottinger, MD

Comparing bariatric surgery procedures

Bariatric surgery is currently the most effective weight loss treatment for people who are severely obese. But there is little evidence to help patients and surgeons choose between different surgical approaches.

The "gold standard" is the Roux-en-Y gastric bypass. Long-term data show lasting weight loss and a high rate of remission of diabetes after surgery.

Recently, sleeve gastrectomy has emerged as the most frequently performed bariatric procedure in the United States. Despite its common use, there are not sufficient data on its long-term safety and effectiveness.

KPSC researchers will compare the surgical safety and health outcomes of the 2 procedures. Specifically, they will examine remission of high blood pressure, elevated cholesterol, and diabetes. They will also study overall cardiovascular risk.

Findings from this study will add to the evidence base on the benefits and risks of the 2 procedures. Ultimately, this will help clinicians and patients make better informed decisions about which bariatric procedures are best for improved cardiovascular health and safety.

Principal investigator: Karen Coleman, PhD, MS

Funder: National Institute of Diabetes and Digestive and Kidney Diseases

KPSC co-investigator: Kristi Reynolds, PhD, MPH



Dr. Dan Huynh, Dr. Huong Nguyen, Heather Watson

Type 1 diabetes: Incidence in adults

Type 1 diabetes most often occurs in children, but can occur in adults. There are not reliable estimates of type 1 diabetes incidence in adults between the ages of 20 and 45 years that include assessments of diabetes antibodies, a key differentiator between type 1 and type 2 diabetes. Kaiser Permanente researchers hope to achieve this with a new study.

Researchers will develop and deploy electronic health record-based tools to identify all members ages 20 to 45 years who are newly diagnosed with diabetes. As part of this study, researchers will recruit people newly diagnosed with type 1 or type 2 diabetes in 2017 to provide a blood sample for diabetes autoantibody testing.

Using that information, they will estimate incidence of type 1 diabetes by sex and race/ethnicity in this age group.

Principal investigators: Jean Lawrence, ScD, MPH, MSSA (KPSC), and Assiamira Ferrara, MD, PhD (KP Northern California)

Funder: Centers for Disease Control and Prevention with support from the National Institute of Diabetes and Digestive and Kidney Diseases

KPSC co-investigator: Jeff Slezak, MS

Effectiveness of blood clot treatments

Each year, more than 500,000 people in the United States are hospitalized due to venous thromboembolism (VTE)—blood clots that start in a vein and can break loose with devastating consequences, including death. Typical treatment includes at least 3 months of an anticoagulant, or blood-thinning, medication.

Beyond the initial 3 months, patients are often given the option to continue treatment. This may prevent recurrence. Remaining on anticoagulants, however, can lead to serious bleeding complications as well as cost and inconvenience.

Options for VTE treatment include warfarin and 4 newer oral anticoagulants. It isn't clear which medication is the best long-term choice. Choosing the best strategy is particularly difficult when treating people who are older, have kidney disease, or have a high risk of bleeding.

Researchers from KPSC, University of California San Francisco, and KPNC will compare the benefits and risks of different options for long-term VTE treatment using information from electronic health records. Self-reported survey information will be used to assess quality of life and treatment satisfaction.

Principal investigators: Kristi Reynolds, PhD, MPH (KPSC); Margaret Fang, MD, MPH (UCSF); and Alan S. Go, MD (KPNC)

Funder: Patient-Centered Outcomes Research Institute

KPSC co-investigator: Daniel Lang, MD

Safety and effectiveness of MS medications

Multiple sclerosis affects 400,000 people in the United States. A chronic neurological disease, MS often leads to disability and decreased quality of life. While there is no cure, several treatments can mitigate the symptoms and progression of the disease.

Rituximab is increasingly being used to treat MS. Not formally approved by the U.S. Food and Drug Administration for use as an MS treatment, rituximab is commonly used for lymphoma and rheumatoid arthritis. Recent clinical studies have shown that the drug may benefit people with MS.

A KPSC research team, working with the Karolinska Institute in Sweden, will compare the safety and effectiveness of rituximab to that of other multiple sclerosis medications. The study will focus on people with the relapsing-remitting form of MS. This is the most common course of the disease in which flare-ups are followed by periods of clinical remission.

Researchers will draw on data from the Swedish Neuro Registry and KPSC's multiethnic cohort of people with MS.

Principal investigators: Annette Langer-Gould, MD, PhD, MS (KPSC), and Fredrik Piehl, MD (Karolinska Institute)

Funder: Patient-Centered Outcomes Research Institute

Selected findings

In 2016, Kaiser Permanente Southern California scientists and clinician researchers made important findings in a variety of research areas. The following is a small sample of some of these discoveries.

Allergy and Asthma

The strength of the associations between obesity and adult-onset asthma incidence and control are modified by race, age, and sex.

Koebnick C, et al. *Allergy Asthma Clin Immunol*. 2016;12:50.

Bone Health and Orthopedics

Persistent use of opioids more than 90 days after hip surgery was associated with total hip arthroplasty revision surgery, and may be an early indicator of potential surgical failure.

Namba RS, et al. *Acta Orthop*. 2016;87 Suppl 1:37-43.

Surgery for treatment of primary hyperparathyroidism was associated with reduced fracture risk, whereas bisphosphonate treatment was associated with increased bone mineral density but not fewer fractures.

Yeh MW, et al. *Ann Intern Med*. 2016;164(11):715-723.

Cardiovascular Disease

Patients with difficult-to-treat hypertension are slightly more likely to have sleep apnea than patients with treatable hypertension.

Bhandari SK, et al. *Respirology*. 2016;21(8):1486-1492.

Child and Adolescent Health

The risk of younger siblings developing an autism spectrum disorder is 14 times higher if an older sibling has autism spectrum disorder.

Xie F, et al. *J Dev Behav Pediatr*. 2016;37(8):603-609.

Emergency Care

Research to understand the effect of adjusting measurement limits of the D-dimer diagnostic test for pulmonary embolus led to practice changes and predicted overall improvement in patient outcomes for adults over the age of 50 years.

Sharp AL, et al. *Ann Emerg Med*. 2016;67(2):249-257.

Health Equity

Non-Hispanic Asians or Pacific Islanders and non-Hispanic blacks had a slightly shorter time from discovery of an elevated level of serum prostate-specific antigen

to a prostate biopsy compared to non-Hispanic whites at Kaiser Permanente Southern California. This suggests minimal differences exist between racial and ethnic subgroups in time to prostate biopsy after an elevated PSA screening.

Reading SR, et al. *Urology*. 2016;96:121-127.

Health Services Research

Qualitative research can be successfully integrated into health care improvement efforts to better understand quantitative results and increase the effectiveness of improvement efforts in an integrated health care model.

Muñoz-Plaza CE, et al. *Health Res Policy Syst*. 2016;14(1):63.

Mental Health

Kaiser Permanente Southern California researchers and clinicians participated in a national collaborative care initiative that led to redesigning and implementing a strategy for KPSC patients with depression in adult primary care. Of the patients with uncontrolled disease at enrollment, 40% achieved depression remission or response, 23% glucose control, and 58% blood pressure control.

Coleman KJ, et al. *Gen Hosp Psychiatry*. 2016;44:69-76.

Nursing Research

Charge nurses have knowledge of patients, staff, and complex healthcare environments, putting them in a good position to influence patient safety.

Cathro, H. *J Nurs Adm*. 2016;46(4):208-214.

Vaccine Safety and Effectiveness

Patients ages 60 years old and older with end-stage renal disease who received the shingles vaccine were half as likely to develop shingles compared to those who were not vaccinated. Giving the shingles vaccine soon after these patients started dialysis appeared to provide the greatest protection if they were not vaccinated before dialysis.

Tseng HF, et al. *Clin Infect Dis*. 2016;62(4):462-467.

For a full list of 2016 publications, please see the bibliography starting on page 64.

Research program overview

Department of Research & Evaluation

The Department of Research & Evaluation focuses on conducting research with real-world implications and translating findings into practice. We are expanding and building scientific expertise in new areas including health services research and implementation science. This helps Kaiser Permanente determine how to provide better care for our members and communities, as well as bridge the gap between research and practice.

Our team



Research scientists	36
Clinician investigators	8
Clinical trials investigators	70
Affiliated investigators	10
Research fellows	6
Support staff	300+



450+ scholarly publications

Our top research areas



- Cancer
- Cardiovascular disease
- Diabetes
- Health services research & implementation science
- Obesity
- Vaccine safety & effectiveness
- Maternal & infant health

Kaiser Permanente Southern California

As an integrated health system—encompassing medical group, medical facilities, and health plan—Kaiser Permanente Southern California provides an ideal environment for population-based epidemiologic, clinical, and health services research.

Facilities and infrastructure

Our hospitals, medical offices, labs, and pharmacies are all linked by an information infrastructure that supports both clinical practice and business needs. Health information, especially from our vast electronic health record, can be leveraged for research that helps us answer questions about the care we deliver. It can also provide a means to support changes in practice based on what we learn through research.



Facilities

Medical centers	14
Medical offices	222



Physicians and employees

Physicians	6,600+
Nurses	23,000+
Employees	68,000

Southern California membership (as of December 2016)

Members	4.2 million+
Ethnicities represented	260+
Languages spoken	150+

Nearly 90% stay with Kaiser Permanente after 1 year.
About 77% remain with Kaiser Permanente after 3 years.
Approximately 70% remain with Kaiser Permanente after 5 years.

Sex

Female	52%
Male	48%

Age

≤19 years	24%
20–44	35%
45–64	27%
65+	14%

Race

Hispanic or Latino	42%
White	36%
Asian/Pacific-Islander	12%
Black or African-American	9%
Other	1%



Funding overview

Funding for research at Kaiser Permanente Southern California has increased rapidly in the past decade to support a growing portfolio of innovative and clinically relevant research.

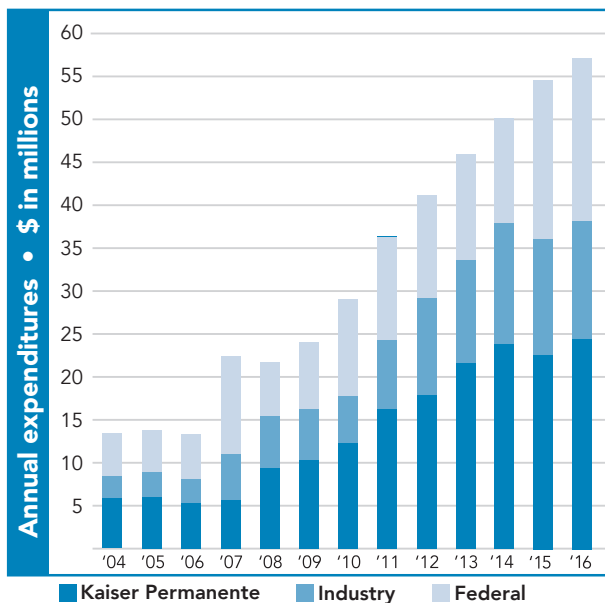
Total research expenditures

\$57.7 million in 2016 (up from \$54.5 million in 2015)

Federal grants: more than \$19.9 million

Industry contracts: nearly \$13.6 million

Kaiser Permanente provided the remaining funds. Internal funding sources included the Kaiser Permanente Community Benefit program, the Southern California Permanente Medical Group, the Sidney R. Garfield Memorial Fund, and the Center for Effectiveness & Safety Research.



2016 grants and awards

New grants and contracts awarded in 2016 will fund research at Kaiser Permanente Southern California over a period of years.



2016 grant submissions

(new grants only, excludes clinical trials)

Grants submitted 123

Grants awarded 64



New grants and contracts (all years)

Direct costs \$18.8 million

Indirect costs \$8.7 million

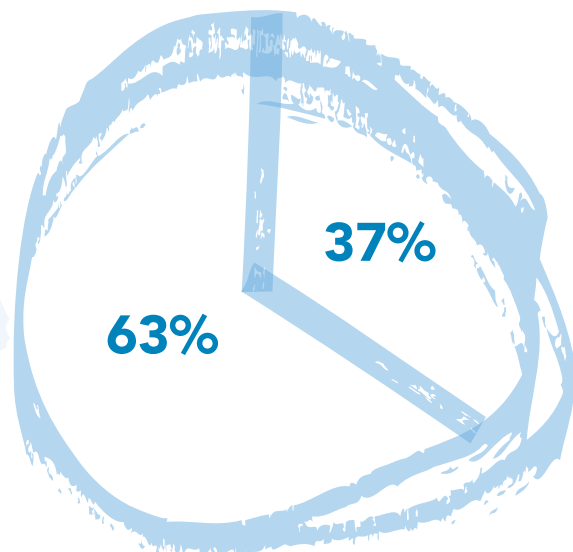
Total \$27.5 million

Continued grants and contracts (all years)

Direct costs \$14.8 million

Indirect costs \$5.7 million

Total \$20.5 million



In 2016, Kaiser Permanente Southern California was the lead institution, or “prime,” for 63% of all the grants and contracts submitted, and was the subcontractor institution for the remaining 37%.

Projects funded by the Regional Research Committee

The Regional Research Committee awards funds from Kaiser Permanente's Direct to Community Benefit Investment fund for research projects led by clinicians and other health care professionals in Kaiser Permanente Southern California.

These projects address real-world clinical questions and have the potential to point to smarter ways to prevent and treat common health conditions. In 2016, the committee awarded funds to the following studies.

Allergy

The HEDIS Medication Management for People with Asthma (MMA) measure and asthma outcomes.

Principal investigator: William Crawford, MD, South Bay

Comparison of microRNA before and after aspirin desensitization in individuals with aspirin-exacerbated respiratory disease.

Principal investigator: Deena Pourang, MD, resident, Los Angeles

Dermatology

The risk of aortic aneurysm in patients with psoriasis.

Principal investigator: Jashin Wu, MD, Los Angeles

Emergency Medicine

Survey assessment of performance improvement curriculum at Kaiser Permanente Southern California graduate medical education programs.

Principal investigator: So L. Onishi, MD, resident, San Diego

Comparison of opioid ordering patterns before and after adoption of treatment guidelines designed to reduce its use in emergency departments that are part of a health maintenance organization.

Principal investigator: Ali Ghobadi, MD, Orange County



Monica Bhardwaj, Dr. Shelley Bose, Dr. Suresh Gurbani



Family Medicine

Antidepressant medication adherence, a look at prescribing practices that may influence compliance.

Principal investigator: Nicole Morris, MD, Los Angeles

Exercise Vital Sign and health care resource utilization.

Principal investigator: Alex McDonald, MD, resident, Fontana

Gastroenterology

Does pancreatic cyst fluid carcinoembryonic antigen (CEA) level predict pancreatic malignancy? A retrospective analysis.

Principal investigator: Kevin Kao, MD, Downey

Fecal immunochemical tests and colorectal carcinoma detection.

Principal investigator: Daniel Zisook, MD, San Diego

Application of surgical enhanced recovery techniques (ASERT) in the care of patients with acute pancreatitis: a randomized-controlled trial.

Principal investigator: Bechien Wu, MD, MPH, Los Angeles

Internal Medicine

Albumin for hydration in patients susceptible to volume overload.

Principal investigator: Paul Salama, MD, Los Angeles

Neurology

Post-lumbar puncture headache and prone positioning.

Principal investigator: Eric Kim, MD, Los Angeles

Neurology Stroke/Cerebral Vascular

Aerobic exercise for stroke survivors.

Principal investigator: William Neil, MD, San Diego

Obstetrics-Gynecology

Comparison of outpatient Foley bulb induction to traditional induction of labor.

Principal investigator: Mary Washburn Bull, MD, Garden Grove Medical Offices

Ob-Gyn Oncology

Cancer risk and recurrence in BRCA patients undergoing medical management of co-morbid conditions.

Principal investigator: Scott Lentz, MD, Los Angeles

Ophthalmology

Amniotic membrane grafts to reduce pterygium recurrence.

Principal investigator: Ronald Rosen, MD, Panorama City

The effectiveness of a combination of red yeast rice extract, olive oil, and oatmeal to lower cholesterol.

Principal investigator: Amila Silva, MD, Fontana

Retinal toxicity among long-term hydroxychloroquine (Plaquenil) users.

Principal investigator: Jeremy Shaw, MD, Baldwin Park

Orthopedics/Sports Medicine

Use of ultrasound in sports medicine clinic: a 5-year review.

Principal investigator: Michael Fong, MD, Los Angeles

PRINT Trial (Platelet-Rich Injections vs. Needle Tenotomy): evaluation of ultrasound-guided procedures for the treatment of chronic tendinosis.

Principal investigator: Marissa Vasquez, MD, Los Angeles

Psychiatry

Relationship between personality types and job satisfaction amongst physicians.

Principal investigator: Irina Filip, MD, resident, Fontana

Computer-delivered CBT as care augmentation for depressed primary care patients.

Principal investigator: Roderick Stuart, MD, Fontana

Rheumatology

The occurrence of shingles and the effect of zoster vaccination with the use of methotrexate in rheumatoid arthritis patients.

Principal investigator: Antony Lin, MD, Fontana

Surgery, General

Laparoscopic lavage and drainage versus Hartmann's Procedure for perforated diverticulitis.

Principal investigator: Mohammed Al-Temimi, MD, resident, Fontana

The use of closed-suction subcutaneous wound catheters in decreasing surgical site morbidity in patients undergoing contaminated surgical procedures in a pancreatoduodenectomy model in patients.

Principal investigator: Edmund Burke, MD, Riverside

Urology, Pediatric

A retrospective cohort study investigating the association between continuous antibiotic prophylaxis and uropathogen-resistant infections in children with vesicoureteral reflux.

Principal investigator: Jenny Yiee, MD, Orange County

Regional Research Committee 2016

Somjot S. Brar, MD, MPH

Chair, Regional Research Committee

Antelope Valley

Jonathan T. Truong, MD, *Area Research Chair*

Baldwin Park

Gregory Maletis, MD, *Area Research Chair*

Downey

Eugene A. Chu, MD, *Area Research Chair*

Fontana/San Bernardino

Robert E. Sallis, MD, *Area Research Chair*

South Bay

Bradley K. Ackerson, MD, *Area Research Chair*

Los Angeles

John J. Sim, MD, *Area Research Chair*

Orange County

Patrick J. Van Winkle, MD, *Area Research Chair*

Panorama City/Valencia

Shireen Fatemi, MD, *Area Research Chair*

Riverside/Palm Springs

Brian S. Lim, MD, *Area Research Chair*

San Diego

Somjot S. Brar, MD, MPH, *Interim Area Research Chair*

West Los Angeles/Kern County

Michael J. Fassett, MD, *Area Research Chair*

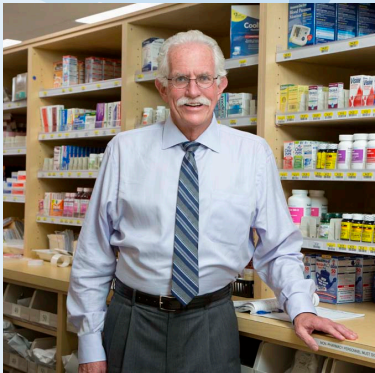
Woodland Hills

Lester D. Thompson, MD, *Area Research Chair*

Department of Research & Evaluation

Steven J. Jacobsen, MD, PhD, *Area Research Chair*

Stephanie Tovar, MS, *RRC Operations*



INVESTIGATORS



Scientific leadership



Steven J. Jacobsen, MD, PhD

Senior Director of Research

- Dr. Steven Jacobsen is a chronic disease epidemiologist who conducts population-based research that has a direct impact on patient care.
- Areas of interest: Urologic conditions, both benign and malignant; renal disease; and vaccine safety and effectiveness.
- In 2016: Dr. Jacobsen served as local principal investigator for the Vaccine Safety Datalink and several of its sub-studies. He also led a study examining transitions from chronic kidney disease to end-stage renal disease with the goal of developing strategies for optimal starts of renal replacement therapy.



Somjot S. Brar, MD, MPH

Chair, Regional Research Committee

- Dr. Somjot Brar studies the comparative effectiveness of medical devices, strategies, and medications for the management of cardiac diseases.
- Areas of interest: Cardiovascular diseases, outcomes, and predictors. Also, cardiovascular clinical trials: design, analysis, conduct, and reporting.
- In 2016: Dr. Brar worked on studies focused on improving the safety of invasive cardiac procedures.



Michael K. Gould, MD, MS

Director, Division of Health Services Research & Implementation Science

- Dr. Michael Gould conducts both externally funded and operationally focused research on respiratory disease, venous thromboembolism, and lung cancer. He leads the Care Improvement Research Team.
- Areas of interest: Dissemination and implementation research, delivery system science, patient-centered outcomes, and comparative effectiveness.
- In 2016, Dr. Gould published articles on lung cancer screening and reducing low-value cancer care. He initiated several new externally funded research projects on smoking cessation, lung cancer diagnosis, and comorbidity assessment.



Kristi Reynolds, PhD, MPH

Director, Division of Epidemiologic Research

- Dr. Kristi Reynolds is a chronic disease epidemiologist whose research focuses on prevention and treatment of cardiovascular disease and on cardiovascular disease outcomes.
- Areas of interest: Cardiovascular disease epidemiology, quality of care, and medication adherence.
- In 2016: Dr. Reynolds published 20 manuscripts. She also received an award from the Patient-Centered Outcomes Research Institute to compare the effectiveness of new and older anticoagulants and to conduct a survey to obtain patient experiences about their anticoagulant use.



William J. Towner, MD, FACP, FIDSA

Regional Physician Director, Division of Clinical Trials Research

- Dr. William Towner focuses on expanding and supporting a robust clinical trials program in Kaiser Permanente Southern California. He also lends guidance to clinician research at KPSC, and leads the Southern California Permanente Medical Group Clinician Investigator Program.
- Areas of research interest: Infectious diseases, particularly HIV and hepatitis C.
- In 2016: Dr. Towner published research on the difference in life expectancy between HIV-infected and HIV-uninfected patients, as well as other publications about HIV health outcomes.



Anny Hui Xiang, PhD, MS

Director, Division of Biostatistics Research

- Dr. Anny Xiang is an investigator and applied biostatistician who uses statistical methodologies to understand disease development and conduct clinical trials in disease prevention and intervention.
- Areas of interest: Diabetes, gestational diabetes, obesity, and clinical trials.
- In 2016: Dr. Xiang published research on maternal obesity, gestational diabetes, breastfeeding, and childhood overweight in *Pediatric Obesity*. The research showed that pre-pregnancy obesity increased the risk of children being overweight at age 2 years, while breastfeeding decreased that risk. Several online news sources reported on the study.



Deborah Rohm Young, PhD, MBA

Director, Division of Behavioral Research

- Dr. Deborah Young conducts physical activity intervention trials for adults and adolescents, and studies how physical inactivity and excess sedentary time are associated with cardiovascular risk.
- Areas of interest: Health disparities, obesity prevention, cardiovascular risks, and impacts and barriers to physical activity.
- In 2016: Dr. Young published 8 manuscripts. She led an American Heart Association Scientific Statement that examined the evidence linking sedentary behavior to increased cardiovascular morbidity and mortality.

Research scientists



Annette L. Adams, PhD, MPH | Research Scientist I

Division of Epidemiologic Research

- Dr. Annette Adams focuses on medications and risk of fractures, particularly osteoporosis-related injuries of the hip and lower extremities.
- Areas of interest: Bone health and orthopedic injuries in older adults.
- In 2016: Dr. Adams' work included development of a method for predicting short-term fracture risk among older adults.



Mary Helen Black,* PhD, MS | Research Scientist I

Division of Biostatistics Research

- Dr. Mary Helen Black is a biostatistician and genetic epidemiologist who focuses on genetic and environmental contributions to diabetes, obesity, and cardiovascular disease.
- Areas of interest: Genetic associations, gene-gene and gene-environment interaction, and pharmacogenetics.
- In 2016: Dr. Black was the lead author on research that showed that women who are diagnosed with hypertensive disorders while pregnant are more than twice as likely to develop high blood pressure in the first year after delivery as women who did not have any pregnancy-related hypertension.

*Dr. Black left Kaiser Permanente in 2016.



Craig Cheetham,* PharmD, MS | Research Scientist II

Division of Epidemiologic Research

- Dr. Craig Cheetham's research focused on pharmacoepidemiology and drug safety.
- Areas of interest: Cardiovascular safety of drugs, maternal and neonatal safety of drugs and vaccines used during pregnancy, and medication adherence.
- In 2016: Dr. Cheetham co-authored 9 articles, including studies on rheumatoid arthritis and cardiovascular disease, bisphosphonate use and arthroplasty revision, bisphosphonate use and breast cancer, tamoxifen and antidepressant drug interaction, gout treatments, flu vaccine during pregnancy, and the effectiveness of telephone reminders for prompting patients to refill prescriptions.

*Dr. Cheetham retired from Kaiser Permanente in 2016.



Chun Chao, PhD, MS | Research Scientist II

Division of Epidemiologic Research

- Dr. Chun Chao is a cancer epidemiologist who focuses on generating knowledge to guide clinical practices and inform guideline development related to cancer care.
- Areas of interest: Adolescent and young adult cancers, lymphoid malignancies, and cervical cancer prevention and screening.
- In 2016: Dr. Chao investigated the risk of long-term health outcomes and preventive service use among survivors of adolescent and young adult cancer, gaps in cervical cancer screening, and risk factors for chemotherapy-induced complications including anemia and neutropenia.



Karen J. Coleman, PhD, MS | Research Scientist II

Division of Behavioral Research

- Dr. Karen Coleman focuses on the behavioral, social, and environmental determinants of adult obesity and on interventions in primary care for adult depression.
- Areas of interest: Health equity and patient-, provider-, and system-level factors that lead to successful interventions for physical and emotional wellness.
- In 2016: Dr. Coleman was lead investigator for Southern California in the Mental Health Research Network, and led studies on the impact of bariatric surgery on weight loss and remission of chronic disease.



Kim N. Danforth, ScD, MPH | Research Scientist I

Division of Epidemiologic Research

- Dr. Kim Danforth is an epidemiologist whose primary goal is to use research to answer health questions with real-world significance.
- Areas of interest: Cancer prevention, etiology, treatment, and care quality, particularly for bladder cancer, ovarian cancer, and prostate cancer. Also quality of care, outpatient safety, health equity, and disparities.
- In 2016: Dr. Danforth focused on research and quality improvement work related to bladder cancer care.



Stephen F. Derose, MD, MSHS | Research Scientist I

Division of Health Services Research & Implementation Science

- Dr. Stephen Derose's research focuses on prevention of chronic disease, health services delivery, and epidemiologic outcomes.
- Areas of interest: Sleep disorders and chronic kidney disease.
- In 2016: Dr. Derose was principal investigator on studies to determine whether treatment for sleep apnea affects kidney disease progression and to examine the association between CPAP therapy and health care utilization. He studied bariatric surgery and kidney outcomes, hepatitis C and kidney outcomes, the effects of the Affordable Care Act, and the genetic heterogeneity of sleep apnea.



Darios Getahun, MD, PhD, MPH | Research Scientist II

Division of Epidemiologic Research

- Dr. Darios Getahun focuses on the role of genetics and the environment in the risk of birth complications and poor health for children and mothers.
- Areas of interest: Perinatal and child health, successive pregnancy outcomes, and health disparities.
- In 2016: Dr. Getahun found that exposure to antepartum or intrapartum complications is associated with increased risk of autism spectrum disorder in the offspring. The study increases the opportunity for early identification of at-risk children who could potentially benefit from further attention and intervention.

**David Glass, PhD | Research Scientist III***Division of Health Services Research & Implementation Science*

- Dr. David Glass is a social scientist who seeks to understand how and why patients and/or physicians make decisions, and the implications of those findings for improving care delivery.
- Areas of interest: End-of-life care, worksite clinics, urgent care clinics, and global health.
- In 2016: Dr. Glass focused on how patients decide to go to the emergency department for non life- or limb-threatening situations. He also studied how a worksite health clinic affects patterns of utilization and cost.

**Erin E. Hahn, PhD, MPH | Research Scientist I***Division of Health Services Research & Implementation Science*

- Dr. Erin Hahn is a health services and implementation science researcher who uses qualitative and quantitative methods to explore quality and variations in cancer care.
- Areas of interest: Quality, cancer survivorship, guideline implementation, and delivery system science.
- In 2016: Dr. Hahn focused on cancer comorbidity clusters and their impact on quality of care and survival, clinician perceptions related to use of non-recommended cancer care, and implementation of psychosocial recommendations in oncology.

**Reina Haque, PhD, MPH | Research Scientist II***Division of Epidemiologic Research*

- Dr. Reina Haque is a senior cancer epidemiologist and scientific advisor for the Cancer Registry. She has served on National Cancer Institute, Patient-Centered Outcomes Research Institute, and Breast Cancer Campaign (U.K.) grant review panels.
- Areas of interest: Cancer prognosis, survivorship, and treatment effects.
- In 2016: Dr. Haque published 8 papers on prostate and breast cancer, including a study that determined that breast cancer survivors who used aromatase inhibitors did not have an increased risk of cardiovascular disease as compared to those who used tamoxifen.

**Rulin C. Hechter, MD, PhD | Research Scientist I***Division of Epidemiologic Research*

- Dr. Rulin Hechter focuses on improving care and reducing disparities among patients at risk of or living with HIV infection and associated comorbidities.
- Areas of interest: HIV prevention and care management, and substance abuse.
- In 2016: Dr. Hechter was the site principal investigator on 3 multisite studies funded by the National Institutes of Health. She led a study funded by the Garfield Memorial Fund to establish transgender care quality metrics. She received a scholarship to present findings at the 21st International AIDS Conference in South Africa.



Sharon M. Hudson,* PhD, MA | Research Scientist I

Division of Behavioral Research

- Dr. Sharon Hudson is a behavioral scientist who uses qualitative and quantitative methods to evaluate psychosocial determinants of health and behavior.
- Areas of interest: Individual-, physician-, and system-related factors affecting adherence, and ophthalmology.
- In 2016: Dr. Hudson was lead author on an article that showed that effective communication techniques, medical center support, and teamwork were hallmarks of medical centers that had the highest rates of HPV completion among patients.

*Dr. Hudson left Kaiser Permanente in 2016.



Aniket A. Kawatkar, PhD, MS | Research Scientist I

Division of Health Services Research & Implementation Science

- Dr. Aniket Kawatkar uses established methods of econometrics, conjoint analysis, and net-benefit analysis to evaluate interventions and treatments aimed at improving patient care in clinical settings.
- Areas of interest: Comparative effectiveness research, secular trends, health inequity and disparities, and patterns of health care utilization and associated outcomes.
- In 2016: Dr. Kawatkar received an "Outstanding Reviewer" award from the *Value in Health* journal.



Corinna Koebnick, PhD, MSc | Research Scientist II

Division of Behavioral Research

- Dr. Corinna Koebnick is an obesity epidemiologist whose research focuses on children and young adults. From 2012 to 2015, she also led Kaiser Permanente Southern California's efforts to build a research biobank.
- Areas of interest: Health consequences of obesity in children and young adults, and health delivery services for those with obesity-related conditions.
- In 2016: Dr. Koebnick worked on the implementation of a novel computer-assisted decision support tool to improve adherence to pediatric blood pressure screening guidelines.



Annette M. Langer-Gould, MD, PhD, MS | Research Scientist I

Division of Epidemiologic Research

- Dr. Annette Langer-Gould is an epidemiologist and multiple sclerosis specialist at the Kaiser Permanente Los Angeles Medical Center.
- Areas of interest: The role of vitamin D, genotype, race/ethnicity, and MS susceptibility, MS and pregnancy, as well as predictors of prognosis and comparative effectiveness of MS therapeutics.
- In 2016: She led a team that is developing, implementing, and evaluating programs to provide high-quality affordable care for people with MS.

**Jean M. Lawrence, ScD, MPH, MSSA | Research Scientist III***Division of Epidemiologic Research*

- Dr. Jean Lawrence focuses on issues that affect the health of children, young adults, and reproductive-age women.
- Areas of interest: Diabetes: trends, transitions in care, and psychosocial implications. Gestational diabetes: trends, outcomes, and telemedicine. Environmental exposures during pregnancy.
- In 2016: Dr. Lawrence received new funding from the Centers for Disease Control and Prevention to study the incidence of type 1 diabetes and diabetes-related autoimmunity in adults 20 to 45 years of age in collaboration with Kaiser Permanente Northern California.

**Marlene M. Lugg,* DrPH, MPH | Research Scientist I***Division of Epidemiologic Research*

- Dr. Marlene Lugg focused on the study of immunization practices, vaccine safety, the development of health information systems, and the causes and control of accidental injury.
- Areas of interest: Vaccines, injury prevention, and data linkage and immunization-tracking systems.
- In 2016: Dr. Lugg worked on research focused on mortality rates in a vaccinated population, undervaccination in the United States, and impact of delays in obtaining childhood vaccination.

*Dr. Lugg retired from Kaiser Permanente in 2016.

**Brian S. Mittman, PhD | Research Scientist III***Division of Health Services Research & Implementation Science*

- Dr. Brian Mittman works to apply and strengthen the fields of implementation and improvement science and enhance their contributions to improve health care quality and outcomes.
- Areas of interest: Organization and delivery of health care services and the development and application of health care quality and performance improvement strategies.
- In 2016: Dr. Mittman researched high-performing health systems, studied patient transitions between hospital and home, evaluated Kaiser Permanente's electronic clinical surveillance innovations, and studied patient education for kidney transplantation.

**Claudia Nau, PhD | Research Scientist I***Division of Behavioral Research*

- Dr. Claudia Nau's work focuses on integrating social determinants of disease with clinical care and prevention efforts. She uses methods such as geographic information systems, machine-learning approaches, and multilevel models.
- Areas of interest: Social determinants, identifying high-risk patients with social needs, and community asset mapping.
- In 2016: Dr. Nau joined R&E in late 2016. She began assembling a database for community-level risk factors, and assessing best practices for determining individual-level socioeconomic status via available community information.



Huong Q. Nguyen, PhD, RN | Research Scientist II

Division of Health Services Research & Implementation Science

- Dr. Huong Nguyen focuses on using observational and experimental research methods to improve care processes and outcomes for older adult patients with chronic conditions across the care continuum.
- Areas of interest: Self-management, physical activity, depression, care transitions, and palliative care.
- In 2016: Dr. Nguyen and the Project ACHIEVE team found that patients who completed a follow-up clinic visit within 7 days of hospital discharge had a lower risk of returning to the hospital within 30 days.



Lei Qian, PhD | Research Scientist I

Division of Biostatistics Research

- Dr. Lei Qian is a biostatistician lead for the Division of Epidemiologic Research and the Division of Biostatistics Research.
- Areas of interest: Study design and complex statistical analysis using electronic health record data in vaccine safety and cardiovascular disease research.
- In 2016: Dr. Qian's research focused on assessing safety of influenza vaccination in surgical inpatients and pregnant women, evaluating systematic intervention effects in vaccine uptake, and examining the eosinophil count and outcomes in severe uncontrolled asthma.



Virginia P. Quinn,* PhD, MPH | Research Scientist II

Division of Behavioral Research

- Dr. Virginia Quinn focused on health services research and behavioral health research.
- Areas of interest: Cancer prevention, screening, and quality of care.
- In 2016: Dr. Quinn co-authored more than 15 articles, including research on transgender health services, health services for children with autism spectrum disorder, and screening for colon cancer, cervical cancer, and breast cancer.

*Dr. Quinn retired from Kaiser Permanente in 2016.



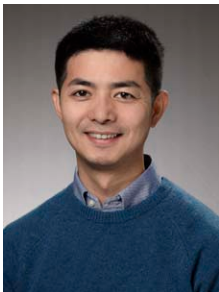
Adam L. Sharp, MD, MS | Research Scientist I

Division of Health Services Research & Implementation Science

- Dr. Adam Sharp is an emergency physician and health services researcher who identifies gaps between best and current practices and evaluates interventions to facilitate better care.
- Areas of interest: Translational research, evidence-based care, and social determinants.
- In 2016: Dr. Sharp led work to improve the care of emergency patients with chest pain. He also collaborated to understand the nonmedical needs of complex patients, such as the need for food and housing. He published research that improved antibiotic stewardship, and determined current practices for head trauma patients.

**Ernest Shen, PhD | Research Scientist I***Division of Biostatistics Research*

- Dr. Ernest Shen is the biostatistician lead for the Division of Health Services Research & Implementation Science, and focuses on quantitative methodology for health services research.
- Areas of interest: Structural equation modeling, quantile regression, and Bayesian inference.
- In 2016: Dr. Shen was lead author on a paper about post-hospital discharge visits and readmission risk for Medicare patients in Kaiser Permanente Southern California. He also co-authored articles on Telestroke implementation, KPSC's Online Personal Action Plan, and diagnostic testing for breast cancer survivors.

**Jiaxiao Shi, PhD | Research Scientist I***Division of Biostatistics Research*

- Dr. Jiaxiao Shi is the biostatistician lead for the Regional Research Statistical Support team.
- Areas of interest: Non-parametric statistical approaches and data mining techniques.
- In 2016: Dr. Shi published studies on breast cancer and breast cancer survivors, the outcomes on gastric cancer, and studied the connection between plasma renin activity and cardiovascular disease.

**Margo A. Sidell, ScD, MSPH | Research Scientist I***Division of Biostatistics Research*

- Dr. Margo Sidell is the biostatistician and programmer lead for the Division of Behavioral Research.
- Areas of interest: Statistical methods, risk-reduction behavior, preventive care, physical activity, diet, and environments as they relate to overall wellness.
- In 2016: Dr. Sidell published research examining HPV4 completion in boys in relation to changing use recommendations; serum phosphorus levels, race, and socioeconomic status in hemodialysis patients; and the risk of delayed intracerebral hemorrhage in anticoagulated patients after minor head trauma.



Jeff Slezak, MS | Research Scientist I

Division of Biostatistics Research

- Jeff Slezak is a biostatistician lead for the Division of Epidemiologic Research and the Division of Biostatistics Research.
- Areas of interest: Predictive modeling, prostate and bladder cancer, and vaccine safety.
- In 2016: Jeff Slezak published 5 manuscripts on prostate cancer, vaccine safety, and bladder cancer screening.



Sara Yee Tartof, PhD, MPH | Research Scientist I

Division of Epidemiologic Research

- Dr. Sara Tartof is an infectious disease epidemiologist who aims to reduce the development and transmission of antibiotic resistant infections, hospital infections, and vaccine-preventable diseases.
- Areas of interest: Antibiotic resistance, vaccine safety and effectiveness, hospital-acquired infections, and hepatitis C infection.
- In 2016: Widespread dissemination of Dr. Sara Tartof's study demonstrating the safety of flu vaccine in surgical patients supported region-wide efforts to increase vaccination coverage in this group.



Hung Fu Tseng, PhD, MPH | Research Scientist III

Division of Epidemiologic Research

- Dr. Hung Fu Tseng evaluates vaccine effectiveness and safety in real-world settings.
- Areas of interest: Vaccinology, pharmacoepidemiology, outcomes research, infectious diseases, and evidence-based medicine.
- In 2016: Dr. Tseng was the principal investigator on a National Institute of Allergy and Infectious Diseases-funded study evaluating the effectiveness and risks of the shingles vaccine, a study evaluating the burden of respiratory syncytial virus infection in the elderly, and several Phase IV clinical trials assessing the safety of a meningococcal vaccine.

Research fellows



Tracy A. Becerra-Culqui, PhD, MPH, OTR/L | Post-Doctoral Research Fellow

Division of Epidemiologic Research

- Areas of interest: Neurodevelopmental disorders, autism, exposures during pregnancy, early childhood, vaccine safety, and health equity.
- In 2016: Dr. Tracy Becerra-Culqui was appointed as a post-doctoral research fellow in September, when she began working on the meningococcal vaccine in high-risk infant safety study. She led a manuscript on caregiver experiences with autism services and treatments and a presentation on gender health in early childhood. She also contributed to manuscripts in cervical, bladder, and colorectal cancer prevention.



**Gloria C. Chi, PhD, MPH | Epidemic Intelligence Service Officer,
Centers for Disease Control and Prevention**

Division of Epidemiologic Research

- Areas of interest: Environmental health, chronic disease, and social epidemiology.
- In 2016: Dr. Gloria Chi conducted an observational study to identify correlates of blood lead testing and lead levels in young children. She also analyzed the trends of hospitalized acute myocardial infarction by race/ethnicity. In addition, she studied the validity of using diagnosis codes to assign diabetes type in youth, which is crucial for diabetes surveillance.



Anna C. Davis, PhD, MPH | Post-Doctoral Scholar

Division of Health Services Research & Implementation Science

- Areas of Interest: Health economics, patients with complex needs, frail elderly, disparities, and systems redesign.
- In 2016: Dr. Anna Davis was the primary investigator on a Care Improvement Research Team study aimed at characterizing the comorbidities and spending trajectories of patients with complex needs. She is the regional project leader for the Kaiser Permanente Southern California Predicted High-Utilizers Program, which leverages a predictive algorithm to improve care for patients with complex and costly health conditions.



Nirupa R. Ghai, PhD, MPH | Post-Doctoral Research Fellow

Division of Epidemiologic Research

- Areas of interest: Colorectal, bladder, and head and neck cancers.
- In 2016: Dr. Nirupa Ghai was the lead on a study evaluating patients' use of statins as a free pass for unhealthy lifestyle behaviors. She contributed to a large colorectal cancer screening study. Her poster on colorectal cancer screening among those older than 75 years of age received a poster of distinction award from the Digestive Disease Week Meeting.



Shayna L. Henry, PhD | Post-Doctoral Research Fellow

Division of Health Services Research & Implementation Science

- Areas of interest: Modifiable factors associated with the delivery of care for patients with chronic kidney disease.
- In 2016: Dr. Shayna Henry studied patient perspectives on dialysis starts; rates of survival and disease progression among elderly patients with chronic kidney disease, and strategies to improve knowledge about living-donor kidney transplant.



Stephanie R. Reading PhD, MPH | Post-Doctoral Research Fellow

Division of Epidemiologic Research

- Areas of Interest: Aging, chronic diseases, and mental health.
- In 2016: Dr. Stephanie Reading presented and published on projects addressing prostate cancer treatment patterns and the association between psychosocial stressors and physiological functioning. She also worked on a project examining hypertension control rates after the implementation of the Affordable Care Act.

Clinician investigators



Raymond Chen, MD, DPhil | Clinician Investigator

- Area of interest: Using technology to improve clinical outcomes.
- In 2016: Dr. Raymond Chen conducted a study using telemedicine video conferencing to care for patients after discharge from heart surgery in order to provide early intervention for post-operative complications.



Casey K. Ng, MD | Clinician Investigator

- Areas of interest: Kidney stones, kidney cysts, and hematuria.
- In 2016: Dr. Casey Ng published an editorial in the *British Journal of Urology International* on the hematuria outreach program in the UK. He was also a co-author on several papers and abstracts. He continues to serve as a consulting editor on *BJUI* and as a reviewer for *Journal of Urology*, *BJUI*, and *European Urology*.



Navdeep Sangha, MD | Clinician Investigator

- Areas of interest: Acute ischemic stroke and intracerebral hemorrhage.
- In 2016: Dr. Navdeep Sangha published research on endovascular therapy for acute ischemic stroke, near-occlusive carotid disease, and the successful implementation of telestroke in hospital settings.



John Sim, MD | Clinician Investigator

- Areas of interest: Chronic kidney disease and end-stage renal disease outcomes, hypertension, glomerulonephropathies, and patient safety.
- In 2016: Dr. John Sim was lead author on a large epidemiology study on prevalence and distribution of glomerular diseases of the kidney. He also authored papers on chronic kidney disease quality and safety outcomes, hypertension, electrolyte disorders, medication adherence among end-stage renal disease patients, and sleep apnea.



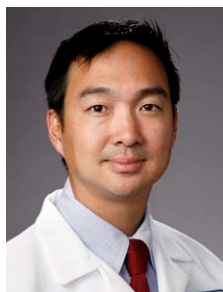
Devansu Tewari, MD, MBA | Clinician Investigator

- Areas of interest: Quality improvement studies related to ovarian, uterine, and cervical cancers (gynecologic oncology); clinical trials; and the role of integrated health care delivery systems in improving access and care pathways for cancer patients.
- In 2016: Dr. Devansu Tewari co-led a study for a new indication of a human papillomavirus test in cervical cancer screening that received Food and Drug Administration approval.



Emily L. Whitcomb, MD, MAS | Clinician Investigator

- Areas of interest: Pelvic floor disorders including urinary incontinence, pelvic organ prolapse, and anal incontinence; impact of training on surgical outcomes; and the effect of obesity on pelvic floor disorders.
- In 2016: Dr. Emily Whitcomb was senior author on 2 retrospective studies: one evaluated urinary tract infections after midurethral sling placement, and another, the use of vaginal estrogen and midurethral sling exposure. She participated in a national research group focused on female pelvic medicine and reconstructive surgery quality outcomes research.



Bechien U. Wu, MD, MPH | Clinician Investigator

- Areas of interest: Acute and chronic pancreatitis; early detection and prevention of gastrointestinal cancers.
- In 2016: Dr. Bechien Wu was senior author on 5 studies. He led an international effort to develop a new disease activity index in acute pancreatitis. He is principal site investigator for the Consortium for the Study of Chronic Pancreatitis, Diabetes, and Pancreatic Cancer (U01) and is currently leading a prospective randomized controlled trial on enhanced recovery approaches in acute pancreatitis.



Hui Xue, MD, MMSc | Clinician Investigator

- Areas of interest: Geriatric nephrology, bone mineral metabolism in chronic kidney disease, and outcomes in dialysis and renal transplant.
- In 2016: Dr. Hui Xue completed research on survival and outcomes in the very elderly with advanced kidney disease, and presented that work at the American Society of Nephrology annual conference.

Affiliated investigators

Sirichai Chayasirisobhon, MD | Associate Investigator

- Areas of interest: Mechanism of refractory epilepsy, the use of vagus nerve stimulation for epilepsy, and clinical trials of new anti-epileptic drugs.
- In 2016: Dr. Sirichai Chayasirisobhon led 2 clinical trials exploring the efficacy, safety, and effectiveness of medications for seizures. He researched developmental disability associated with epilepsy.

R. James Dudl, MD | Associate Investigator

- Areas of interest: Population-level cardiovascular disease prevention and diabetes.
- In 2016: Recent research on a new medication regimen aimed at reducing heart attacks and strokes was implemented in 2016 at a variety of community clinics and medical groups within San Diego County. A Center for Medicare & Medicaid Innovation grant is funding a study to determine effectiveness of the new medical regime in these settings.

Donald S. Fong, MD, MPH | Affiliated Investigator

- Areas of interest: Retinal diseases, glaucoma, outcomes of cataract surgery, and myopia prevention and control.
- In 2016: Dr. Donald Fong conducted studies to investigate real-world treatment outcomes for diabetic retinopathy and glaucoma.

George F. Longstreth, MD | Associate Investigator

- Areas of interest: Gastrointestinal disease epidemiology, functional gastrointestinal disorders, acute large bowel ischemia, diverticulitis, celiac disease, and medical anthropology.
- In 2016: Dr. George Longstreth co-authored the American College of Gastroenterology Clinical Guidelines on colon ischemia and reported on large visceral artery occlusion in patients with right-side colon ischemia.

David A. Sacks, MD | Associate Investigator

- Areas of interest: Diabetes in pregnancy and the use of telemedicine in the care of women with gestational diabetes.
- In 2016: Dr. David Sacks completed a pilot study exploring the use of telemedicine in the care of women with gestational diabetes. He was a co-investigator on the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study. He also wrote 2 chapters about diabetes in pregnancy for a textbook of which he is a co-editor.

Michael Schatz, MD, MS | Associate Investigator

- Areas of interest: Patient-centered asthma outcomes, risk stratification for asthma population management, asthma quality-of-care measures, and the interrelationships of asthma and pregnancy.
- In 2016: Dr. Michael Schatz was a co-author on a number of research articles focused on asthma and several articles regarding the safety of vaccines and medications during pregnancy.

Adam Schickedanz, MD | Affiliated Investigator

- Areas of interest: Social determinants of health, impact of social needs on utilization and costs.
- In 2016: Dr. Adam Schickedanz helped evaluate the cost of a social-needs screening and referral program for patients with complex and costly health care needs. The evaluation includes quasi-experimental and randomized trial designs, qualitative interviews, and patient and provider surveys. Early results indicate that those patients who use the medical system at the highest rates also have high rates of unmet social needs.

Lauren P. Wallner, PhD, MPH | Adjunct Investigator

- Areas of interest: Cancer care delivery research, including quality and coordination of care, and utilization of health services.
- In 2016: Dr. Lauren Wallner published research on the involvement of primary care physicians in breast cancer care, social media use among women with breast cancer, and 5-alpha reductase inhibitors and prostate cancer mortality. She also received a career development grant from the National Cancer Institute to develop a patient-centered navigation tool for breast cancer patients.

Robert S. Zeiger, MD, PhD | Associate Investigator

- Areas of interest: Asthma and allergic disorders, clinical trials comparing asthma treatments, cost analysis of asthma and allergic disorders, and outcomes research.
- In 2016: Dr. Robert Zeiger was lead author on several asthma studies, including one on the health care utilization and cost of severe uncontrolled asthma, and another on the characteristics and outcomes of asthma patients with chronic oral corticosteroid use.

Clinical trials portfolio principal investigators



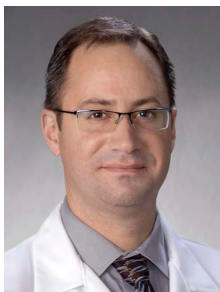
Robert M. Cooper, MD | Pediatric Hematology/Oncology, Los Angeles Medical Center

- Dr. Robert Cooper leads the Kaiser Permanente Southern California Pediatric Oncology Clinical Trials Program, which oversees clinical trials for children, adolescents, and young adults with cancer. The program had more than 30 clinical trials open for enrollment in 2016.
- Areas of interest: Treatment, survivorship, and end-of-life issues of children, adolescents, and young adults with cancer, as well as timeliness of cancer care delivery.
- In 2016: Dr. Cooper was the principal investigator for Kaiser Permanente Southern California's program for cord blood collection for public banking.



Nigel Gupta, MD | Cardiac Electrophysiology, Los Angeles Medical Center

- Dr. Nigel Gupta is director of Regional Cardiac Electrophysiology Services for Southern California. He leads his department's clinical research, which consists of 6 active trials with over 300 enrollees.
- Areas of interest: Trials focused on the safe and innovative delivery of therapy from cardiac implantable electronic devices, as well as simple and complex cardiac ablation and structural heart therapies for patients with cardiac arrhythmias.
- In 2016: Dr. Gupta was principal investigator and leading national enroller of 2 heart failure device trials.



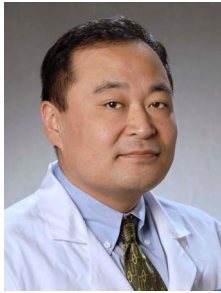
Michael R. Girvigian, MD | Radiation Oncology, Los Angeles Medical Center

- Dr. Michael Girvigian is the assistant chief for the Department of Radiation Oncology at the Los Angeles Medical Center and principal investigator for Radiation Therapy Oncology Group clinical trials at Kaiser Permanente Southern California.
- Areas of interest: The management of central nervous system tumors of the brain and spine, as well as soft tissue tumors.
- In 2016: Dr. Girvigian was the principal investigator on 10 radiation oncology clinical trial protocols.



Kelley Hodgkiss-Harlow, MD | Vascular Surgery, San Diego Medical Center

- Dr. Kelley Hodgkiss-Harlow is the chief of the Department of Vascular Surgery at the San Diego Medical Center and a principal investigator for Kaiser Permanente's San Diego Cardiovascular Research Institute. She has participated in 8 vascular surgery clinical trial protocols.
- Areas of interest: Critical limb ischemia, carotid disease, abdominal aortic aneurysm, vascular access, thoracic outlet syndrome, and peripheral vascular disease.
- In 2016: Dr. Hodgkiss-Harlow completed a study on the impact of raising the positive D-dimer threshold for deep-vein thrombosis.



Han Koh, MD | Hematology/Oncology, Downey Medical Center

- Dr. Han Koh is the principal investigator for the Cancer Clinical Trials Access Program for Kaiser Permanente Southern California.
- Areas of interest: Pancreatic cancer, prostate cancer, renal cancer, and non-Hodgkin lymphoma.
- In 2016: Dr. Koh was principal investigator on clinical trials focused on therapies for squamous cell lung cancer, drug combinations to fight metastatic colorectal cancer, and advanced genome sequencing on resected lung cancers with the goal of better predicting who might benefit from chemotherapy.



Shawn A. Menefee, MD | Ob-Gyn/Urogynecology, San Diego Medical Center

- Dr. Shawn Menefee is chair of the Regional Southern California Permanente Medical Group Pelvic Floor Disorders Committee, Area Research Chair in San Diego, and an elected board member for the American Urogynecologic Society.
- Areas of interest: Pelvic floor disorders including urinary incontinence, pelvic organ prolapse, and fecal incontinence.
- In 2016: Dr. Menefee co-authored studies on female microscopic hematuria, mixed urinary incontinence, and refractory urge incontinence. He was principal investigator on a National Institute of Child Health and Human Development-sponsored prolapse treatment trial.



Anders Nyberg, MD, PhD | Hepatology, San Diego Medical Center

- Dr. Anders Nyberg is a principal investigator with the San Diego Hepatology Research Program and is active in clinical trials and epidemiological research.
- Areas of interest: Drug therapies for hepatitis C, liver disease, nonalcoholic steatohepatitis (NASH), and other gastrointestinal disorders.
- In 2016: Dr. Nyberg conducted 4 clinical trials and participated in 2 epidemiological studies. He worked on final reporting for the studies on cancer rates in patients with hepatitis C and statin use on liver cancer.



Lisa Nyberg, MD, MPH | Hepatology Research, San Diego Medical Center

- Dr. Lisa Nyberg leads the hepatology clinical trials unit in San Diego.
- Areas of interest: New drug therapies for patients with hepatitis C, hepatitis B, fatty liver disease, celiac disease, and liver transplant patients.
- In 2016: Dr. Nyberg conducted 2 epidemiological studies, an interregional epidemiological study, and 11 clinical trials including one that provided hepatitis C treatment at no cost for over 100 Kaiser Permanente members. Her study results have been recognized internationally.

**Jonathan A. Polikoff, MD | Hematology/Oncology, San Diego Medical Center**

- Dr. Jonathan Polikoff is the director emeritus of the Cancer Clinical Trials Access Program for Kaiser Permanente Southern California.
- Areas of interest: Establishing new standards of treatment for cancer, prevention of breast and colon cancer, and improving the quality of life for cancer patients.
- In 2016: Dr. Polikoff focused on breast cancer treatment; targeted therapies in the adjuvant and metastatic settings and immunotherapy in the triple negative population. He also began a major study of weight loss intervention after cancer treatment.

**Ricardo T. Spielberger, MD | Oncology/Transplant, Los Angeles Medical Center**

- Dr. Ricardo Spielberger is director of Bone Marrow Transplantation for the Southern California Permanente Medical Group.
- Areas of interest: Hematopoietic cell transplantation, transplantation side effects, and opportunistic infections.
- In 2016: Dr. Spielberger was involved in clinical trials to treat hematologic malignancies using stem cell transplants at City of Hope, the acute leukemia and transplant research group at City of Hope, and developing the City of Hope and Kaiser Permanente outpatient bone marrow transplant program at City of Hope.

**Jashin J. Wu, MD | Dermatology, Los Angeles Medical Center**

- Dr. Jashin Wu is director of Dermatology Research for the Department of Dermatology at Kaiser Permanente Los Angeles Medical Center.
- Area of interest: Psoriasis.
- In 2016: Dr. Wu published 29 peer-reviewed articles and served as principal investigator for 7 clinical trials in psoriasis, and 5 retrospective cohort studies using the Kaiser Permanente Southern California electronic health records.

Clinical trials investigators by specialty

Allergy

Sandra Christiansen, MD, San Diego – Clairemont Mesa Medical Offices

Noah Friedman, MD, San Diego – Clairemont Mesa Medical Offices

Michael Kaplan, MD, Los Angeles Medical Center

Robert Zeiger, MD, PhD, San Diego – Clairemont Mesa Medical Offices

Cardiology

Vicken Aharonian, MD, Los Angeles Medical Center

Somjot Brar, MD, MPH, Los Angeles Medical Center

Jeffrey Cavendish, MD, San Diego Medical Center

Eric Chou, MD, Fontana Medical Center

Nigel Gupta, MD, Los Angeles Medical Center

William Keen, MD, San Diego Medical Center

Daniel Lang, MD, West Los Angeles Medical Center

Dermatology

Jashin Wu, MD, Los Angeles Medical Center

Emergency Medicine

Garo Balkian, MD, Woodland Hills Medical Center

Donald Mebust, MD, San Diego Medical Center

Endocrinology

Patricia Wu, MD, San Diego – Carmel Valley Medical Offices

Family Medicine

Michael Lalich, MD, San Diego Medical Center

Gastroenterology

Chris Conteas, MD, Los Angeles Medical Center

Karl Kwok, MD, Los Angeles Medical Center

Bechien Wu, MD, MPH, Los Angeles Medical Center



Dr. Lisa Nyberg, Dr. Anders Nyberg

General and Oncologic Colorectal Surgery

Vikram Attaluri, MD, Los Angeles Medical Center

Elisabeth McLemore, MD, Los Angeles Medical Center

General Surgery

Louis Difronzo, MD, Los Angeles Medical Center

Samir Johna, MD, Fontana Medical Center

Gregory Marujo, MD, Riverside Medical Center

Genetics

George Tiller, MD, PhD, Los Angeles Medical Center

Gynecologic Oncology

Scott Lentz, MD, Los Angeles Medical Center

Devansu Tewari, MD, MBA, Irvine – Alton/Sand Canyon Medical Offices

Hepatology

Anders Nyberg, MD, PhD, San Diego Medical Center

Lisa Nyberg, MD, MPH, San Diego – Garfield Specialty Care Center

Heather Patton, MD, San Diego Medical Center

Hepatology/Transplant

Amandeep Sahota, MD, Los Angeles Medical Center

Infectious Diseases

Holly Kim, MD, West Los Angeles Medical Center

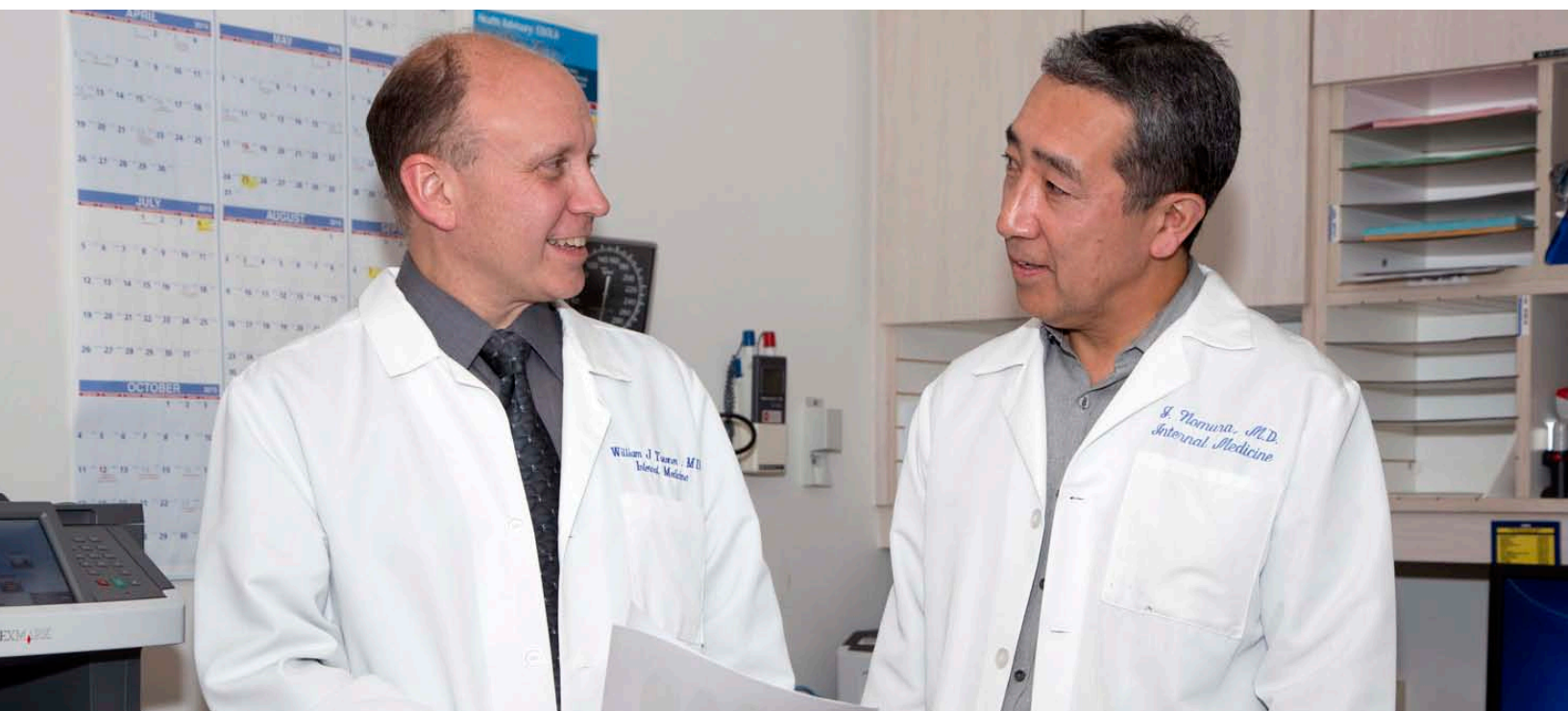
Jim Nomura, MD, Los Angeles Medical Center

Mario Perez, DO, Fontana Medical Center

Bhavani Rao, MD, Panorama City Medical Center

Gunter Rieg, MD, South Bay Medical Center

Jared Spotkov, MD, Harbor City – South Bay Medical Center



Dr. William Towner, Dr. Jim Nomura

Internal Medicine

David Buccigrossi, MD, Carlsbad Medical Offices

Steve Lee, DO, Fontana Medical Center

William Towner, MD, Los Angeles Medical Center

Nephrology

John Sim, MD, Los Angeles Medical Center

Hui Xue, MD, MMSc, San Diego Medical Center

Neurology

Zahra Ajani, MD, Los Angeles Medical Center

Sirichai Chayasirisobhon, MD, Anaheim – Kraemer Medical Offices

Suresh Gurbani, MD, Anaheim – Kraemer Medical Offices

Dennis Hwang, MD, Fontana Medical Center

Annette Langer-Gould, MD, PhD, MS, Los Angeles Medical Center

Prasanth Manthana, MD, Los Angeles Medical Center

Navdeep Sangha, MD, Los Angeles Medical Center

Neuro-Oncology

Richard Green, MD, Los Angeles Medical Center

Ob-Gyn

Keisha Dyer, MD, MPH, San Diego – Pt. Loma Medical Offices

Ob-Gyn/Urogynecology

Karl Lubber, MD, San Diego – Pt. Loma Medical Offices

Shawn Menefee, MD, San Diego – Pt. Loma Medical Offices

John Nguyen, MD, Downey – Orchard Medical Offices

Jasmine Tan-Kim, MD, San Diego – Pt. Loma Medical Offices



Dr. Shawn Menefee

Oncology

Gary Buchschacher, MD, Los Angeles Medical Center

Han Koh, MD, Downey Medical Center

Jonathan Polikoff, MD, San Diego Medical Center

Oncology/Transplant

Ricardo T. Spielberger, MD, Los Angeles Medical Center

Ophthalmology

Nicole Benitah, MD, West Los Angeles Medical Center

Vincent Hau, MD, Riverside Medical Center

Orthopedics

Kamran Aurang, MD, Irvine – Alton/Sand Canyon Medical Offices

Jeffrey Kessler, MD, Los Angeles Medical Center

Jennifer Weiss, MD, Los Angeles Medical Center

Pediatrics

Barbara Lounsbury, MD, San Diego – Clairemont Mesa Medical Offices

Pediatrics-Adolescent/Teen Health

Luis Zeledon, MD, Los Angeles Medical Center

Pediatric Cardiology

Morris Salem, MD, Los Angeles Medical Center

Pediatric Oncology

Jerry Cheng, MD, Los Angeles Medical Center

Robert Cooper, MD, Los Angeles Medical Center

Pediatric Pulmonology

Muhammad Saeed, MD, Los Angeles Medical Center

Radiation Oncology

Michael Girvigian, MD, Los Angeles Medical Center

Radiology

Lei Feng, MD, PhD, Los Angeles Medical Center

Regional Metabolic Services

Divya Vats, MD, Los Angeles Medical Center

Urology

Gary Chien, MD, Los Angeles Medical Center

Polina Reyblat, MD, Los Angeles Medical Center

Eugene Rhee, MD, San Diego – Otay Mesa Medical Offices

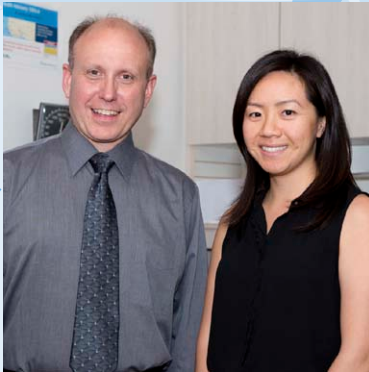
Vascular Surgery

Catherine Chang, MD, San Diego Medical Center

Kelley Hodgkiss-Harlow, MD, San Diego Medical Center

Edward Plecha, MD, San Diego Medical Center

Elena Rakhlin, MD, San Diego Medical Center



PUBLICATIONS



2016 Publications

Scientists, clinicians, and other health professionals from Kaiser Permanente Southern California authored scholarly publications on a wide range of topics in 2016, from allergy and asthma to women's health. Kaiser Permanente Southern California authors are noted in **bold**.

Allergy and Asthma

Camargo CA, Davis KJ, Andrews EB, Stempel DA, **Schatz M**. Pharmacoepidemiological study of long-acting beta-agonist/inhaled corticosteroid therapy and asthma mortality: clinical implications. *Clin Drug Investig*. 2016 Dec;36(12):993-999.

Christiansen SC, **Schatz M**, Yang SJ, Ngor E, Chen W, Zuraw BL. Hypertension and asthma: a comorbid relationship. *J Allergy Clin Immunol Pract*. 2016 Jan-Feb;4(1):76-81.

Crans Yoon AM, Chiu V, Rana JS, Sheikh J. Association of allergic rhinitis, coronary heart disease, cerebrovascular disease, and all-cause mortality. *Ann Allergy Asthma Immunol*. 2016 Oct;117(4):359-364.e1.

Doshi A, Tse K, Riedl M, Zuraw B, Christiansen S. Cases of acquired C1 inhibitor deficiency treated with rituximab. *J Allergy Clin Immunol Pract*. 2016 Sep-Oct;4(5):987-988.

Koebnick C, Fischer H, Daley MF, Ferrara A, Horberg MA, Waitzfelder B, **Young DR**, **Gould MK**. Interacting effects of obesity, race, ethnicity and sex on the incidence and control of adult-onset asthma. *Allergy Asthma Clin Immunol*. 2016;12:50. PMID: PMC5069790

Lee JT, Frank DN, Ramakrishnan V. Microbiome of the paranasal sinuses: update and literature review. *Am J Rhinol Allergy*. 2016 Jan-Feb;30(1):3-16.

Litonjua AA, Carey VJ, Laranjo N, Harshfield BJ, McElrath TF, O'Connor GT, Sandel M, Iverson RE, Lee-Paritz A, Strunk RC, Bacharier LB, Macones GA, **Zeiger RS**, **Schatz M**, Hollis BW, Hornsby E, Hawrylowicz C, Wu AC, Weiss ST. Effect of prenatal supplementation with vitamin D on asthma or recurrent wheezing in offspring by age 3 years: the VDAART randomized clinical trial. *JAMA*. 2016 Jan;315(4):362-370.

Macy E. Practical management of patients with a history of immediate hypersensitivity to common non-beta-lactam drugs. *Curr Allergy Asthma Rep*. 2016 Jan;16(1):4.

McGeachie MJ, Yates KP, Zhou X, Guo F, Sternberg AL, Van Natta ML, Wise RA, Szeffler SJ, Sharma S, Kho AT, Cho MH, Croteau-Chonka DC, Castaldi PJ, Jain G, Sanyal A, Zhan Y, Lajoie BR, Dekker J, Stamatoyannopoulos J, Covar RA, **Zeiger RS**, Adkinson NF, Williams PV,

Kelly HW, Grasemann H, Vonk JM, Koppelman GH, Postma DS, Raby BA, Houston I, Lu Q, Fuhlbrigge AL, Tantisira KG, Silverman EK, Tonascia J, Weiss ST, Strunk RC; CAMP Research Group. Patterns of growth and decline in lung function in persistent childhood asthma. *N Engl J Med*. 2016 May;374(19):1842-1852. PMID: PMC5032024.

McGeachie MJ, Yates KP, Zhou X, Guo F, Sternberg AL, Van Natta ML, Wise RA, Szeffler SJ, Sharma S, Kho AT, Cho MH, Croteau-Chonka DC, Castaldi PJ, Jain G, Sanyal A, Zhan Y, Lajoie BR, Dekker J, Stamatoyannopoulos J, Covar RA, **Zeiger RS**, Adkinson NF, Williams PV, Kelly HW, Grasemann H, Vonk JM, Koppelman GH, Postma DS, Raby BA, Houston I, Lu Q, Fuhlbrigge AL, Tantisira KG, Silverman EK, Tonascia J, Strunk RC, Weiss ST; CAMP Research Group. Genetics and genomics of longitudinal lung function patterns in asthmatics. *Am J Respir Crit Care Med*. 2016 Dec;194(12):1465-1474.

Palmsten K, **Schatz M**, Chan PH, Johnson DL, Chambers CD. Validation of the pregnancy asthma control test. *J Allergy Clin Immunol Pract*. 2016 Mar-Apr;4(2):310-315.e1.

Rank MA, Liesinger JT, Branda ME, Gionfriddo MR, **Schatz M**, **Zeiger RS**, Shah ND. Comparative safety and costs of stepping down asthma medications in patients with controlled asthma. *J Allergy Clin Immunol*. 2016 May;137(5):1373-1379.e3.

Stempel DA, Szeffler SJ, Pedersen S, **Zeiger RS**, Yeakey AM, Lee LA, Liu AH, Mitchell H, Kral KM, Raphiou IH, Prillaman BA, Buaron KS, Yun Kirby S, Pascoe SJ; VESTRI Investigators. Safety of adding salmeterol to fluticasone propionate in children with asthma. *N Engl J Med*. 2016 Sep;375(9):840-849.

Tran TN, **Zeiger RS**, Peters SP, Colice G, Newbold P, Goldman M, Chipps BE. Overlap of atopic, eosinophilic, and TH2-high asthma phenotypes in a general population with current asthma. *Ann Allergy Asthma Immunol*. 2016 Jan;116(1):37-42.

Zeiger RS, **Schatz M**, Li Q, Chen W, Khatry DB, Tran TN. Characteristics and outcomes of HEDIS-defined asthma patients with COPD diagnostic coding. *J Allergy Clin Immunol Pract*. 2016 Mar-Apr;4(2):273-283.e5.

Bone Health and Orthopedics

Bini SA, Chan PH, Inacio MC, Paxton EW, Khatod M. Antibiotic cement was associated with half the risk of re-revision in 1,154 aseptic revision total knee arthroplasties. *Acta Orthop*. 2016 Feb;87(1):55-59.

Brox WT, Chan PH, Cafri G, Inacio MC. Similar mortality with general or regional anesthesia in elderly hip fracture patients. *Acta Orthop*. 2016;87(2):152-157.

Camara R, Ajayi OO, Asgarzadie F. Are external cervical orthoses necessary after anterior cervical discectomy and fusion: a review of the literature. *Cureus*. 2016;8(7):e688.

Carey JL, Wall EJ, Grimm NL, Ganley TJ, Edmonds EW, Anderson AF, Polousky J, Murnaghan ML, Nissen CW, Weiss J, Lyon RM, Chambers HG; Research in OsteoChondritis of the Knee (ROCK) Group. Novel arthroscopic classification of osteochondritis dissecans of the knee: a multicenter reliability study. *Am J Sports Med*. 2016 Jul;44(7):1694-1698.

Cooper J, Mirzayan R. Acellular dermal matrix in rotator cuff surgery. *Am J Orthop*. 2016 Jul-Aug;45(5):301-305.

Darakjian A, Darakjian AB, Chang ET, Camacho M. Refractory obstructive sleep apnea in a patient with diffuse idiopathic skeletal hyperostosis. *Case Rep Otolaryngol*. 2016;2016:4906863.

Davis DE, Acevedo D, Williams A, Williams G. Total shoulder arthroplasty using an inlay mini-glenoid component for glenoid deficiency: a 2-year follow-up of 9 patients. *J Shoulder Elbow Surg*. 2016 Aug;25(8):1354-1361.

Galle SE, Beck JD, Burchette RJ, Harness NG. Outcomes of elbow arthroscopic osteocapsular arthroplasty. *J Hand Surg Am*. 2016 Feb;41(2):184-191.

Gibbons MC, Sato EJ, Bachasson D, Cheng T, Azimi H, Schenk S, Engler AJ, Singh A, Ward SR. Muscle architectural changes after massive human rotator cuff tear. *J Orthop Res*. 2016 Dec;34(12):2089-2095.

Gordon A, Le MV, Swap C. Image diagnosis: knee dislocation. *Perm J*. 2016 Winter;20(1):e107-e108.

Guppy KH, Harris J, Chen J, Paxton EW, Alvarez J, Bernbeck J. Reoperation rates for symptomatic nonunions in posterior cervical (subaxial) fusions with and without bone morphogenetic protein in a cohort of 1158 patients. *J Neurosurg Spine*. 2016 Apr;24(4):556-564.

Guppy KH, Harris J, Chen J, Paxton EW, Bernbeck JA. Reoperation rates for symptomatic nonunions in posterior cervicothoracic fusions with and without bone morphogenetic protein in a cohort of 450 patients. *J Neurosurg Spine*. 2016 Sep;25(3):309-317.

Harness NG. Fixation options for the volar lunate facet fracture: thinking outside the box. *J Wrist Surg*. 2016 Mar;5(1):9-16.

Heckmann N, Auran R, Mirzayan R. Application of amniotic tissue in orthopedic surgery. *Am J Orthop*. 2016 Nov/Dec;45(7):E421-E425.

Inacio MC, Paxton EW, Dillon MT. Understanding orthopaedic registry studies: a comparison with clinical studies. *J Bone Joint Surg Am*. 2016 Jan;98(1):e3.

Inacio MC, Pratt NL, Roughead EE, Paxton EW, Graves SE. Opioid use after total hip arthroplasty surgery is associated with revision surgery. *BMC Musculoskelet Disord*. 2016 Mar;17:122.

Lee CB, Spencer HT, Nygaard KF. Femoral cam deformity due to anterior capsular force: a theoretical model with MRI and cadaveric correlation. *J Orthop*. 2016 Dec;13(4):331-336.

Lee JH, Barnett SL, Patel JJ, Nassif NA, Cummings DJ, Gorab RS. Ten year follow-up of gap balanced, rotating platform total knee arthroplasty in patients under 60 years of age. *J Arthroplasty*. 2016 Jan;31(1):132-136.

McDowell M, Park A, Gerlinger TL. The painful total knee arthroplasty. *Orthop Clin North Am*. 2016 Apr;47(2):317-326.

Minasian T, Claus C, Hariri OR, Piao Z, Quadri SA, Yuhon R, Leong D, Tashjian V. Chondromyxoid fibroma of the sacrum: a case report and literature review. *Surg Neurol Int*. 2016;7(Suppl 13):S370-S374.

Mirzayan R, Lim MJ. Fresh osteochondral allograft transplantation for osteochondritis dissecans of the capitellum in baseball players. *J Shoulder Elbow Surg*. 2016 Nov;25(11):1839-1847.

Nagaraj G, Mitchelson JP, Mcfarland CM, Silver MA. Image diagnosis: capitellar fracture. *Perm J*. 2016 Spring;20(2):84.

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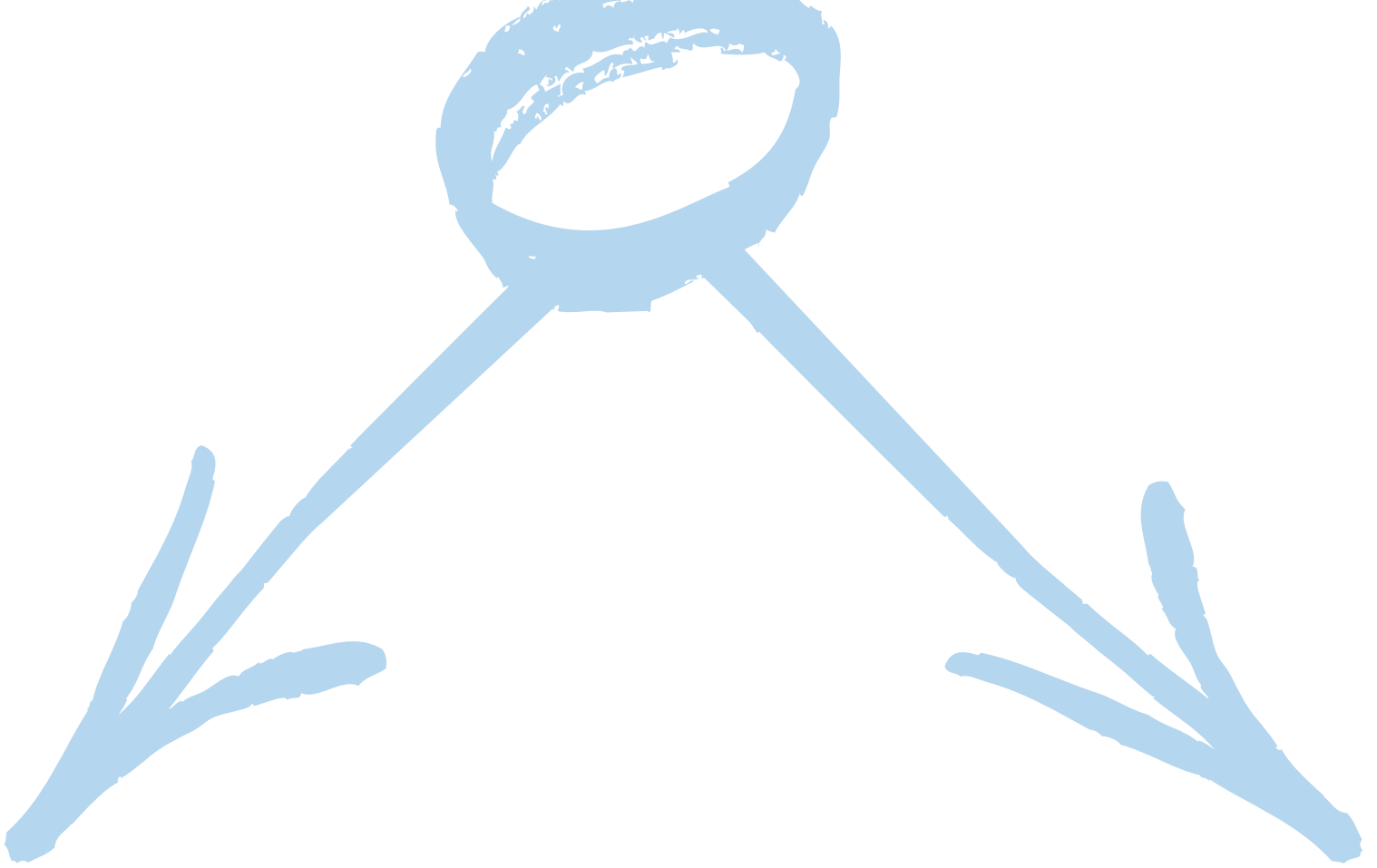


Vision

The Department of Research & Evaluation has an integral role in the success of Kaiser Permanente Southern California by conducting high-quality, innovative translational research that benefits the health of its members and the communities from which they come.

Mission

The mission of the Department of Research & Evaluation is to initiate and conduct high-quality, public-sector health services, epidemiologic, behavioral, and clinical research that has a demonstrable positive impact on the health and well-being of Kaiser Permanente Southern California members and the general population.



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