

FALL 2019

DAWG SCRIPTS

PHARMACY ALUMNI ASSOCIATION & SCHOOL OF PHARMACY NEWS

**CELEBRATING 125 YEARS OF
IMPACT & INNOVATION**

SCHOOL OF PHARMACY
UNIVERSITY *of* WASHINGTON

1894-2019
125
YEARS OF INNOVATION

FROM THE PAA PRESIDENT

We are in for an exciting year. Celebrating 125 years of innovation in pharmacy with the School of Pharmacy is only possible because of the support of our alumni and friends. In 1976, Dean Orr organized the first formal committee that became the Pharmacy Alumni Association and since then we continue to thrive thanks to all our members. By staying connected and supporting the school, you are advancing the profession for future Husky Pharmacists.

As we celebrate our 125th anniversary in the year ahead, we are excited to connect and build on our legacy of support. We hope you join us for some of the activities on the horizon, including:

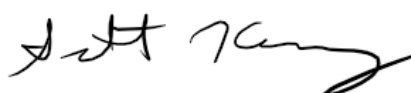
- PAA Member Night with the UW Alumni Association, **September 20, 2019**;
- Homecoming tailgate on **October 19, 2019**;



- Launching the **Alumni Legends** program, featuring 125 Alumni Legend stories that tell the story of the people who made the School of Pharmacy one of the best schools in the country;
- The **Katterman Memorial Lecture** scheduled for February 2020;
- Creating the first **PAA endowed scholarship fund** to support future Husky Pharmacists; and
- Welcoming new PAA Board Members; email rxi@uw.edu to find out more or to nominate someone.

From Blistex to Bagley Hall, our alumni have impacted the School of Pharmacy throughout its 125-year history. I hope you will feel a sense of excitement as we reminisce in this issue of Dawg Scripts about our collective impact on the profession for well over a century. Together, we will continue to create opportunities to connect and support the School.

From all of us on the PAA Board, we invite you to help us shape the future of Pharmacy as we celebrate the last 125 years of innovation. Learn more at: sop.washington.edu/125



Scott Herzog, '03
President, Pharmacy Alumni Association

TO REGISTER FOR THE UPCOMING SCHOOL OF PHARMACY OR PHARMACY ALUMNI ASSOCIATION EVENTS

BELOW, PLEASE EMAIL RXEVENTS@UW.EDU OR GO TO:

sop.washington.edu/events

PAA/UWAA Member Event

SEPTEMBER 20, 6 PM

WATERFRONT ACTIVITIES CENTER
UW SEATTLE CAMPUS

Alaska Airlines Dawg Dash

OCTOBER 13, 9 AM

UW SEATTLE CAMPUS
REGISTER FOR TEAM #HUSKYPHARMACIST

PAA Homecoming Tailgate

OCTOBER 19, 2 HOURS BEFORE KICKOFF

RAINIER VISTA
UW SEATTLE CAMPUS

Dean's Club Fall Harvest

NOVEMBER 14, 6 PM

BY INVITATION ONLY

Phil & Sandra Nudelman Endowed Lecture

OCTOBER 24, 5:30 PM

BURKE MUSEUM
UW SEATTLE CAMPUS

Katterman Memorial Lecture

FEBRUARY 27, 5:30 PM

HUB LYCEUM
UW SEATTLE CAMPUS

PAA Basketball Tailgate

HOME GAME TBD, JANUARY 20-FEBRUARY 2

ALASKA AIRLINES STADIUM
UW SEATTLE CAMPUS

Plein Research Symposium

MARCH 19, 8 AM

CENTER FOR URBAN HORTICULTURE
UW SEATTLE CAMPUS

The 125th

MAY 7, 6 PM

UW SEATTLE CAMPUS

FROM THE DEAN

In the 1890s, Seattle was the Gateway to the Gold Fields. The small frontier town, located on the land of the Coast Salish peoples, was growing—in large part because of the demand for timber and the Klondike gold rush. The city was remote to the rest of the country and very few health care professionals were part of the early populace. Who could fill that gap in this burgeoning town?

Pharmacists.

In 1891, the newly-formed Washington state legislature passed requirements that medications be dispensed by a registered pharmacist. Statewide, there was a need to establish colleges of pharmacy to meet the new demand for trained pharmacists and efforts began in western and eastern Washington to found colleges of pharmacy. Through a collaboration of leaders in the community and at the University of Washington, on July 10, 1894, the UW Board of Regents approved President Meany's call to establish a school dedicated to training pharmacists.

One hundred and twenty-five years later, our faculty and students are at the forefront of innovation and impact. What an extraordinary journey for the school.

A host of stories—how we got from Denny Hill to the H-Wing—are told in Dean **Jack Orr's** *The First Century: A History of the University of Washington School of Pharmacy, 1894-1994*, and in this historic issue of *Dawg Scripts*. This issue contains stories ranging from former Dean **Sid Nelson's** assertion that one of the *Boys in the Boat* was a pharmacy student to some of what our alumni and faculty do beyond the classroom and lab. We also look at the impact our alumni have in the community from serving in the military to serving in the Washington legislature. We look at groundbreaking innovators like **Alice Ball, Joy Plein, Ken Thummel, Allan Rettie,** and **Dave Veenstra.**

We celebrate the advances we've made in the fight against HIV, to improve seizure disorder therapy and management, and how our researchers improve population health.

We close by celebrating our Pharmacy leaders—many of them preceptors and mentors who have influenced all of us and the world at large—and look to the future and how we care for the people we serve—however they need our support—with care, compassion, good science, and best practices.

We are inspired by our rich and innovative history as the UW School of Pharmacy. I hope this issue brings you a sense of pride for all that we have accomplished together and for the impact we continue to have in our communities and on population health.

Our team have planned a fun year of celebrations and opportunities to reconnect with classmates, friends and colleagues as we mark this significant milestone.

Thank you, enjoy the autumn and GO DAWGS!



Sean D. Sullivan, BScPharm, PhD

Professor and Dean, UW School of Pharmacy



A TRADITION of INNOVATION & IMPACT

UW School of Pharmacy has always been ahead of its time—right back to our founding in 1894 as the first school of health sciences at the University of Washington.

The terms **innovation and impact** are thrown around a lot these days. But what does it mean to be innovative and have an impact?



The University of Washington School of Pharmacy community has been asking and answering those questions for 125 years. From our founding downtown on Denny's Knoll (now the site

of the Fairmont Olympic Hotel) in 1894 to sending scientific experiments to the International Space Station to conduct novel experiments, our faculty, students, and alumni are always finding new ways to improve population health.

A new drug safety law passed in 1891 required drug dispensing or compounding be done by a registered pharmacist. At the time, Washington state had no school of pharmacy and the closest was in San Francisco. Through a collaboration between Canadian pharmacist **A.B. Stewart** and UW President **Edmond S. Meany**, the Board of Regents established the College of Pharmacy on July 10, 1894, joining what were then the Colleges of Literature, Science, and Arts, the College of Pedagogy, and the (now defunct) School of Mines and Mining. The first class of eleven pharmacy students in the state of Washington graduated in 1896. Notably that class included three women, **Helen May Anthony**, **Eva Maude Campbell**, and **Virginia Mackey Elder**.

“The University of Washington School of Pharmacy is absolutely and resolutely dedicated to improving population health here in Seattle and around the world. Everyone talks about innovation and impact, but we live it every day.”

SEAN D. SULLIVAN PROFESSOR AND DEAN, UW SCHOOL OF PHARMACY

It would be decades before the establishment of other Schools of Health Sciences at the UW. Starting with a School of Pharmacy reflects the health care system at the time and which, in some rural and underserved communities, is still true to this day. In many communities, then and now, the only health provider for hundreds of miles has often been the pharmacist.

As a public university, our mission is to serve all of the people of our state. We take the responsibility to improve population health seriously. As we celebrate 125 years of impact and innovation, we do so by honoring our roots and mission to inspire education, discover solutions, and serve the people and communities here in Washington and around the world.

1894 - 2019

125
YEARS OF INNOVATION

1894

FIRST PHARMACY CLASSES AT UW BEGIN

Formally approved by the Board of Regents in July 1894, the then-named UW College of Pharmacy saw its first class of Pharmacy students begin on August 20, 1894. The inaugural class of eleven students included four women.

1896

FIRST GRADUATING CLASS

The first class of pharmacy students at the UW and in the state of Washington graduate. The class of 1896 includes three women.

A BOLD SCIENTIST AHEAD of HER TIME

Alice Ball, class of 1912 and 1914, solved the unsolvable in her early 20s, creating a cure for leprosy in 1915—saving thousands of lives from a terrible fate in quarantine.



Born in Seattle in 1892, **Alice Ball** grew up both in Washington state and Hawai'i to middle class parents. Her mother and grandfather were well-known photographers who exposed young Alice to the magic of chemistry in developing photos. A top student at Seattle High School, Alice began her scientific career at the University of Washington in 1910 at the UW College of

Pharmacy. She earned her bachelor's in pharmaceutical chemistry in 1912 and a second degree in pharmacy in 1914. Alice was a skilled and innovative scientist. After graduating, she co-authored a paper, "Benzoylations in Ether Solution" in the *Journal of the American Chemical Society*, received a full scholarship, and became the first African-American woman to earn her master's degree at the College of Hawai'i (now University of Hawai'i). Her master's thesis research involved extracting the active ingredients from the awa (or kava) root. Her innovative process was the first step in what became her life-saving work to create a therapy for leprosy. Leprosy was a terrifying disease at the turn of the 20th century as there was no treatment. Leprosy causes skin sores, nerve damage, muscle weakness, and could even become debilitating. Thousands of people who had leprosy—including children—were torn from their homes and quarantined in Kalaupapa on the small Hawaiian

island of Molokai. The intolerable conditions people with leprosy endured drove Dr. Harry T. Hollmann, U.S. Public Health Officer for Hawai'i and acting director of the Kalihi leprosy clinic, to find a solution. His focus was on finding a way to use chaulmoogra oil, which had shown some promise alleviating leprosy. The oil was not water soluble and caused intense pain when injected and painful nausea when ingested. Hollmann hypothesized that if the active ingredients could be pulled out, a tolerable treatment could be developed. On hearing about Alice's inventive way of extracting the active ingredients from the awa root, he asked Alice to work on a treatment. In under a year, Alice solved the problem. In *Headstrong: 52 Women who Changed Science—and the World*, author Rachel Swaby writes that Alice "treated the oil's fatty acids with an alcohol and a catalyst to kick-start the reaction to create a less viscous chemical compound." Using that process, Alice was able to isolate the ethyl esters from the oil and create an effective therapy. Her breakthrough led to the treatment that saved thousands of lives and was the primary treatment for leprosy until antibiotics came into use in the 1940s. With that, at just 23 years old, she became the first woman and first African-American offered an instructor position in chemistry at the College of Hawai'i (now University of Hawai'i). Tragically, Alice died in a lab accident, likely from chlorine gas, in 1916. The college president, Arthur L. Dean, published her method and took credit for it, naming it after himself. It wasn't until decades later that historian Kathryn Waddell Takara and Stanley Ali, a retired Federal worker, learned about Alice and corrected the record. Thankfully Hollmann had published an article describing "Ball's Method," which preserved Alice's legacy.



A SEATTLE ELEMENTARY SCHOOL STUDENT AND ASPIRING CHEMIST NOMINATED ALICE BALL TO BE THE NAMESAKE OF THE LATEST PARK IN THE GREENWOOD NEIGHBORHOOD OF SEATTLE.

1903

C.W. JOHNSON BECOMES DEAN

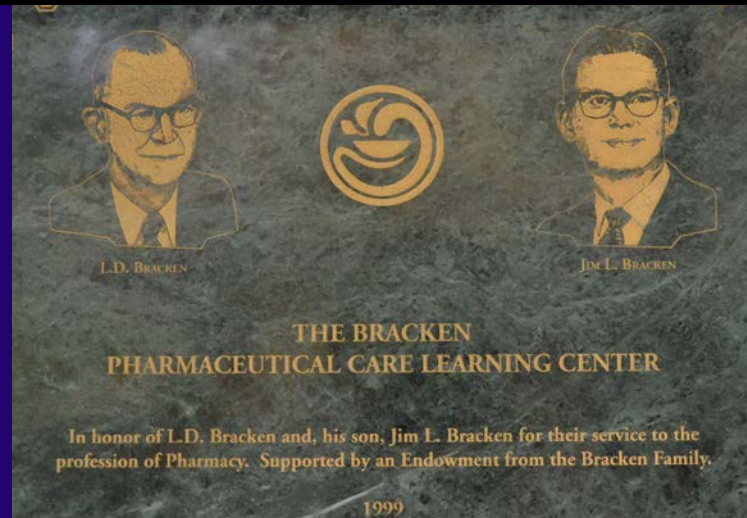
The State Chemist and Pharmaceutical Scientist grew the School and the pharmacy degree to a 4-year program. He was husband, father, father in law, and grandfather to 8 pharmacists in four generations, including faculty members Edith Hindman, '12, '14, Roy Hammarlund, PhD, '52.

1910

FRANCES HINDMAN, CLASS OF 1910, 1912, 1914

In addition to serving as Assistant State Chemist and Bacteriologist, Frances was the first female master's degree alumna and first female pharmacy faculty member. She later married Dean C.W. Johnson in 1920 and had to resign her post, due to rules about nepotism.

INVENTING BLISTEX



A chance meeting on a train between a Seattle pharmacist and Chicago businessman turned an ointment created in L.D. Bracken’s pharmacy into an international brand.

The Bracken family has made significant contributions to pharmacy practice—initially through a compounding invention, and decades later through their investment in creating a state-of-the-art pharmacy learning lab here at the UW School of Pharmacy. Born in Nebraska in 1892—the same year as UWSOP alumna **Alice Ball—Louis D. (L.D.) Bracken** attended the UW School of Pharmacy from 1912-1913. He went on to found the L.D. Bracken Pharmacy in 1921, ultimately with locations in downtown Seattle in the Cobb Building and on First Hill. In the great tradition of compounding pharmacists, L.D. was an inventor, in addition to being an entrepreneur and health care provider. Not long after graduating from UWSOP, he created a formula for cold sores that he called Blistex. L.D. was a gifted pharmacist and businessman who needed a partner who could help him with marketing and business expansion. But with Shark Tank 90 or so years in the future, where would he find that kind of business partner? It was in 1925 when L.D. met Charles Arch while the two were traveling the U.S. by train. Charles was a sales man working for a company that made collapsible metal tubes (like toothpaste tubes), The two struck up a conversation and later agreed for Charles to purchase the rights to make and distribute L.D.’s product. L.D. kept the trademark and earned royalties on the sales—while continuing his vital pharmacy business in Seattle. His son, **Jim L. Bracken**, followed in his father’s footsteps, graduating from UWSOP in 1945 and then joining his father’s pharmacy business.

Interestingly, alumna **Pat Tanac**, ’45, also worked for L.D. Bracken Pharmacy when she graduated. She was one of 2 co-founders of Chi Collegiate Chapter of Lambda Kappa Sigma,

“Many people don’t realize how inventive pharmacists have been throughout history. L.D. Bracken’s story is a great example of the kinds of transformative products and entrepreneurial spirit that often begin in the local, community pharmacy.”

ANDY STERGACHIS, ASSOCIATE DEAN FOR RESEARCH, GRADUATE PROGRAMS, AND NEW INITIATIVES

the professional fraternity for women in pharmacy Pat and her husband **Robert Tanac**, ’45, are founding members of and the Dean’s Club and Pharmacy Alumni Association. (See the story about their daughter **Joyce Tanac-Schroeder**, ’74, Olympic gymnast on page 11.)

When L.D. died in 1954, Jim became president of the company. L.D. and Jim were beloved leaders in the profession, serving as presidents of the Washington State Pharmacists Association and as founding members of the American College of Apothecaries. Jim was also named Pharmacist of the Year for King County. He passed away in 1984. Jim’s wife, **Sharon M. Bracken**, and their children, **Laura Bracken Clough**, **Carol Bracken Clemency**, and **John L. Bracken**, continue to value and honor the contributions that L.D. and Jim made to the profession of pharmacy. Sharon established the Bracken Endowment in memory of Jim and L.D. In 2012, UWSOP opened the Bracken Pharmacy Learning Center, which continues as a hub of training excellence for the next generation of Husky Pharmacists.

1936

CLEMENTINE CLAIRE EVANS, CLASS OF 1936

Clementine Evans graduates as UWSOP’s first female PhD alumna.

1937

BAGLEY HALL OPENS

Built during the Great Depression with funding from the federal Public Works Administration, Bagley Hall near Drumheller Fountain was home to Pharmacy, Chemistry, and Chemical Engineering.

MAKING IT POSSIBLE for the NEXT GENERATION

Being able to compound medications remains a vital skill for pharmacists, whether in independent community pharmacies, hospitals, or specialized pharmacy practices. Compounding pharmacists work directly with their patients to create custom medication solutions. In some cases, the patient is a human. And in some cases, particularly in rural communities, the patient is an animal—from dogs to cats to horses to livestock. In fact, 76% of independent pharmacies compound medications to meet healthcare needs not met by manufactured medications, according to the International Academy of Compounding Pharmacists.

UW School of Pharmacy alumna **Dawn Ipsen**, '01, is the proud owner of two pharmacies—Kusler's Compounding Pharmacy in Snohomish, and Clark's Compounding Pharmacy in Bellevue. Dawn had worked at Kusler's for about ten years before deciding to buy the pharmacy from Janet Kusler, pharmacist and daughter of UWSOP alumnus, **Don Kusler**, '51. Dawn received the Dean's Outstanding Service Award as a PharmD student at UW and is a Clinical Affiliate Faculty member and Preceptor for UW student pharmacists. In addition, she is a Fellow of the American College of Apothecaries and American College of Veterinary Pharmacists. Dawn has continued her compounding pharmacies as vital community resources. She grew up on a farm in Eastern Washington, which led to her getting additional training in veterinary compounding, knowledge she uses regularly in her community compounding pharmacies.

Virtually

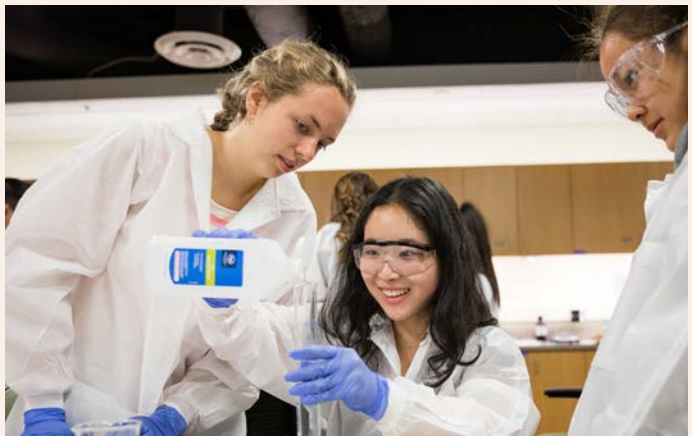
100%

of hospitals compound medications

INTERNATIONAL ACADEMY OF COMPOUNDING PHARMACISTS

“As a compounding pharmacist, I love the creativity involved in solving problems for my patients—whether they are human, horse, pig, dog, cat, or even snakes and tarantulas. Every day I use the knowledge and skills I gained at UWSOP and that’s so exciting.”

DAWN IPSEN, PHARMD, '01



STUDENTS EXPLORING PHARMACY (STEP) PROGRAM BRINGS HIGH SCHOOL STUDENTS FROM AROUND WASHINGTON STATE TO UWSOP FOR A FUN WEEK OF LEARNING WHAT PHARMACISTS ACTUALLY DO. PICTURED HERE, PHARMACY FACULTY MEMBER MICKI KEDZIERSKI'S GRANDDAUGHTER, STELLA HAYNES KIEHN (LEFT) AND ALICIA SASAKI (CENTER), LEARN TO MAKE LOTIONS AND POTIONS WITH SUZANNE LEE WITH PEERS IN THE PROGRAM IN 2017.

Training student pharmacists in the art and science of compounding skills has long been a priority and commitment for Sally and **Craig Kvam**, '72. The Kvam Endowed Scholarship in Pharmaceutical Compounding provides funding support for our student pharmacists to attend a compounding class at the Professional Compounding Centers of America (PCCA) and has supported 61 students since 2011.

1939

FOREST GOODRICH, CLASS OF 1911, 1913, 1914, 1917, 1926 APPOINTED DEAN

The successor to C.W. Johnson had earned every degree offered by the (then) UW College of Pharmacy.

1956

JACK ORR APPOINTED DEAN

Jack, and his wife Maxine, lived in Madison, WI, Columbus, OH, Salt Lake City, UT and Missoula, MT before settling in Seattle. Dean Orr was very active in the American Association of the Colleges of Pharmacy (AAPC).

OUR ALUMNI LEAD & SERVE

The global impact of our mission comes alive every day through our alumni who have stepped up to the call of leadership and service to community and country. These stories are just a few of many examples of leadership and service seen throughout our alumni.

“At the UW School of Pharmacy, I learned how to work with and lead a healthcare team for the benefit of the patient. These skills have become equally vital in my role as a public servant and government leader.”

WASHINGTON STATE REPRESENTATIVE VANDANA SLATTER, PHARM.D., '90



George Benson, '47

LEADER & PUBLIC TRANSIT ADVOCATE

George was a Navy veteran of World War II and five-term member of Seattle City Council (1974-1994). He and his wife, Evelyn, '50, met as students at UWSOP and later co-owned Bensons' Mission Pharmacy on Capitol Hill. George was well-known for improving regional bus service and, in 1982, establishing what came to be called the Benson Waterfront Streetcar, comprised of historic streetcars he acquired from Melbourne, Australia.



Robert "Bob" Lohr, '48

FROM HELL ON WHEELS TO OPTOMETRY

Bob enlisted in the U.S. Army during World War II. He was part of Company C, 82nd Armored Reconnaissance Division "Hell on Wheels" unit—landing at Normandy on D-Day. He was awarded a Silver Star, a Purple Heart, five Bronze Stars, and the French Croix de Guerre. Bob returned to Seattle and went to UWSOP. In the 1960s, he began developing a unique contact lens cleaning solution. He went on to earn his Doctor of Optometry degree and founded Lobob Laboratories, Inc.



Herbert Tsuchiya, '55

DAA AWARD WINNER AND COMMUNITY LEADER

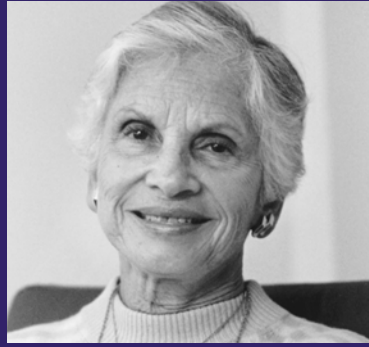
After graduating, Herb worked as a pharmacist for over 50 years, 30 years as owner of Genesee Street Pharmacy. He married Bertha, '48, who owned Luke Pharmacy. Herb managed Columbia Health Center Pharmacy and Ranier Park Medical Clinic, working with underserved populations and volunteered with Rainier Vista Clinic Pharmacy doing drug inventory management and sourcing low cost drugs. In 2008, he was presented the PAA Distinguished Alumni Award.



Ted Taniguchi, '49

PAA CO-FOUNDER, DAA & WSPA LEGEND AWARD

Born in Tacoma, Ted and his family were sent to internment camps by the U.S. government in 1942. After the War, he finished high school & applied to UWSOP. He discovered a love of hospital pharmacy and later was the first director of pharmacy at UWMC. He was a co-founder of PAA & charter member of the Dean's Club. He received the UW PAA DAA & WSPA Legend Awards.



Shirley Bridge, '45

AIDS & WOMEN'S RIGHTS ADVOCATE

A magna cum laude alumna, Shirley was a tremendous patient and women's rights advocate. In 1973, when the bank manager told her he would have to get her husband **Herb Bridge's** permission on a loan, she left and worked to change banking laws. Within a year, Washington state became the first to ban discrimination in credit & insurance based on sex or marital status .



Charles S. Petty, '41

MEDICAL EXAMINER

Charles graduated magna cum laude from UWSOP and was a Navy gunnery officer in WWII. After the war, he earned his MD from Harvard & became Dallas County's first medical examiner in 1969, a pioneer in uniting the medical and criminal investigative function. In 1978, he served on the forensic pathology panel that reviewed the autopsy results of President John F. Kennedy.



Vandana Slatter, '90

PHARMACIST & WA STATE REPRESENTATIVE

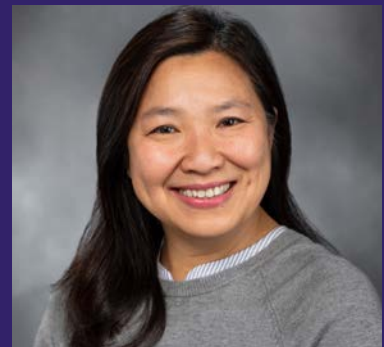
Vandana grew up in northern British Columbia, Canada. Her physician father who had emigrated from India, encouraged her to pursue pharmacy as a career. She studied Pharmacy at the Univ of British Columbia. She married Greg Slatter, who became a post doc in Tom Baillie's lab. Vandana earned her PharmD at UW. She spent 20 years in pharma/biotech industry. She was elected to Bellevue City Council. In 2017, she was appointed and later re-elected to the WA state legislature.



Jack E. Babcock, '37

BRIGADIER GENERAL & DISTINGUISHED ALUM

Jack earned his BSPHarm at UW and a PhD at Georgetown University in 1954. He served in the Army for 31 years, rising to Brigadier General. His service was preparing for possible Nazi invasion of Latin America during WWII, although he wrote later, "War is no damn good for either side. Nobody wins." In 1997, he was the recipient for the PAA Distinguished Alumni Award for Pharmacy Practice. Jack passed away in 2017, at the age of 102.

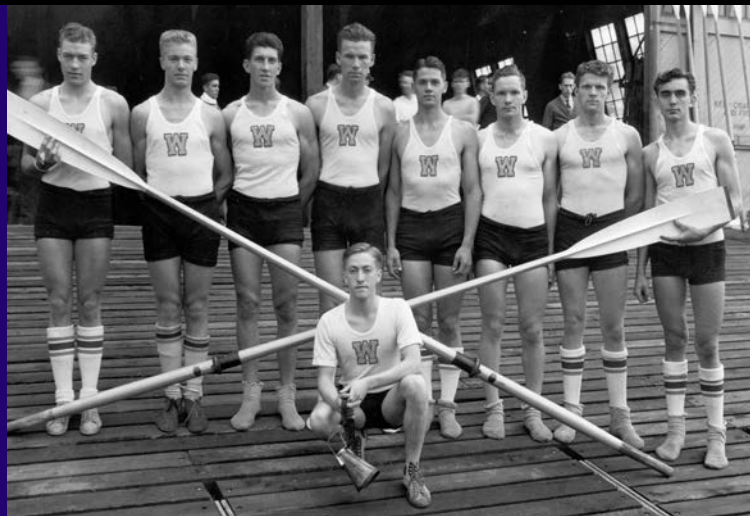


My-Linh Thai, '92

FIRST REFUGEE WASHINGTON STATE REP

My-Linh emigrated to Washington state as a Vietnamese refugee when she was 15. She earned her PharmD at UWSOP. As a passionate advocate for education, she was a leader in the Bellevue Schools, starting as a PTSA volunteer. As WA State Representative, she serves as vice chair of the House Civil Rights and Judiciary committee. "Our legislature should reflect our diverse communities," she said, "and that's why it's a tremendous honor for me to bring my experience as a refugee to this job."

PHARMACY BOY IN THE BOAT?



A long time legend in the oral history of UWSOP was that one of the legendary rowers from the book **Boys in the Boat** was a pharmacy student. We investigate the rumor and find an Olympic pharmacist. But in which boat?

Former Dean **Sid Nelson**, '93, was a well-known story-teller and beloved dean, faculty member, and mentor. His research inspired many—including leading researchers like **Larry Wienkers**, '93, who described going to one of Sid's lectures as the reason he pursued his training in Medicinal Chemistry at the UW. One story that Sid was especially fond of sharing was that one of the famous *Boys in the Boat* was a pharmacy student. We all know the story now—about the 1936 UW crew team who rowed to victory at the Olympics in Germany against incredible odds. Well, we decided to look into this rumor and see if it was true. Our research began with a review of the members of the 1936 crew team...were any of them listed as a pharmacy majors? Several of the team were engineering majors. We found one possibility: **Charles Day**, '38, seat no. 2 in the boat.

In *Boys in the Boat*, most references of Charles involve his heavy smoking or prankster ways. There is a note that he went on to earn his medical degree and became a practicing gynecologist, before he died too young at age 47 of lung cancer in 1962. There was not much more about him, but being a physician was a promising indicator that he may have been a student in pharmacy as an undergrad.

At the time he was an undergraduate (1936-1939), the School of Pharmacy was the only school of the health sciences at the University of Washington, led by Dean **C.W. Johnson**, himself a Pharmacist and the State Chemist for Washington. Over his decades leading the school, C.W. worked to unravel the

then College of Pharmacy from the Department of Chemistry. The two were co-located—first in the original Bagley Hall (Architecture Building) and in 1937 in the new Bagley Hall near Drumheller Fountain. Had Charles taken pharmacy classes as part of his education? We turned to Dean **Jack Orr**'s history of the UW School of Pharmacy. Although he did not mention the legendary Boys, we did—buried within a story of a Kappa Psi scandal— and a note that in the 1930s, UWSOP offered a pre-med program. Had he been pre-med in the School of Pharmacy? We turned to the UW Libraries for help. What could they find out about Charles for us? The digitized UW *Tyee Yearbook* listed him as a University College graduate, not School of Pharmacy. We needed more information so we emailed the Registrar's office. A little while later, the answer came back...

Chemistry.

It was a little disappointing, to be honest. We turned back to the UW Libraries and they sent a copy of the 1935-1936 catalog. And there it was: Organic Chemistry. At the time Charles was a student, there was only one professor of Organic Chemistry, **William Maurice Dehn**, and the course requirements for Pharmacy and Chemistry included a year of Organic Chemistry. So it's very likely that the students in Organic Chemistry were a mix of Chemistry and Pharmacy students. While not quite the same as Charles being a student Husky Pharmacist, it does look like we can say that one of the Boys in the Boat took classes with pharmacy students, which is *almost* the same thing.

1960

LILLIE JONES, '60, JOINS UWSOP FACULTY

Professor Jones is the first black faculty member at UWSOP. After a successful career as a hospital pharmacist, Lillie joined the faculty. She was active in recruiting students, fundraising, and was founder of the Northwest Pharmacists' Coalition.

1973

FIRST DISTINGUISHED ALUMNI AWARD IN PHARMACY PRACTICE

George Benson, '47, first recipient of the DAA in Pharmacy Practice Award, given to individuals who demonstrate outstanding service to the School, the profession of pharmacy and to the community.

Woman in the Boat

The premiere competition in rowing, as readers of *Boys in the Boat* know, is the 8-team races. The level of teamwork, physical and mental conditioning that it takes to row 1000 meters in unison, makes the sport one of the greatest athletic competitions there is. Thirty-five years ago, on August 6, 1984 eight women, led by UW crew coach **Bob Ernst**, lined up in lane 5 at the start and their top competition—the Romanians—were in lane 2. The Romanian team dominated women’s crew finals. The race announcers named the team members, including the coxswain, “**Betsy Beard**, a pharmacist” and a 1984 graduate of UWSOP! The race was competitive with the Romanians holding an early lead. With about 200m remaining, Betsy pushed her team to victory, the hull of their boat skimming the top of the water as the team dug down deep, finishing in just under 3 minutes at 2:59.80. Their win made them the first American women’s



8 rowing team to win Gold at the Olympics. Betsy worked as a pharmacist at Swedish Hospital and later married **John Stillings**, an Olympic Silver medalist in rowing and also a UW alumnus.

A TRADITION of BOUNDLESS ATHLETICS



Joyce Tanac-Schroeder, '74

1968 OLYMPIC GYMNAST AND HALL OF FAMER

Now a pharmacist in Spokane, Joyce was an Olympic gymnast in high school and competed in the 1968 Olympics in Mexico City. Joyce trained at the Seattle YMCA and was top-ranked nationally and is a member of the US Gymnastics & UW Husky Hall of Fame. Her signature move on the Uneven Bars is the Whipsalto-Tanac.



Ed Wong, '71, '98

MOST CONSECUTIVE IRONMAN CANADA RACES

Ed holds the record for finishing 32 consecutive Ironman Canada triathlon races. Training meant getting up at 5 a.m. to swim or riding a bike to work on a rainy day, and sometimes asking himself, “Why did I sign up for this?” Ed said his best event is the bike leg. While he continues his athletic ways, his last Ironman was in 2016.



Phoebe Wright, '19

2018 OLYMPIC TRIALS FOR 800M

In college, Phoebe finished first at the USA Indoor Championship, had wins at the NCAA Indoor & Outdoor championships, and ran under 2 minutes for 800m. The future health economist made the cut for the 800m finals for the 2018 Olympics, but just missed qualifying.

Photo: Dillon Vibes/UO SOJC

1976

PHARMACY ALUMNI ASSOCIATION (PAA) FOUNDED

After some on again, off again alumni gatherings, Dean Jack Orr appointed a committee that established the UW Pharmacy Alumni Association.

1977

NIGMS TRAINING GRANT BEGINS

The longest grant in school history, the NIGMS Pharmacological Sciences Training Grant has supported UWSOP’s graduate education and training for over 40 years.

A TRADITION of REINVENTING PHARMACY

Never doubt the profound impact that our faculty and alumni have had on health care nationwide through decades of advocacy for increased access to patient care.

Increasingly, deadly illnesses are becoming chronic illnesses thanks to advances in drug development and improved medical care. This change calls for increased interprofessional expertise on the health care team—which is where pharmacists come in.

The movement to increase the role of the pharmacist on the health care team began in earnest forty years ago. In 1979 Washington became one of the first states in the country to enact legislation to allow pharmacists to participate in collaborative drug therapy agreements (CDTA) with physicians. UWSOP alumnus **Tim Fuller**, '69, was instrumental in the process to create these agreements. As noted in **Sean D. Sullivan's** article, "Pharmacists as health care providers" in the *Journal of the American College of Clinical Pharmacy*, "In addition to granting pharmacists dependent prescriptive authority, the revised Practice Act allowed for the direct administration of drugs, drug use monitoring and management, and the ability of pharmacists to order, review, and use laboratory tests to modify drug therapy." Most importantly, these services were extended to all licensed pharmacists in the state, as long as they had a CDTA.

The 1990s saw big changes in pharmacy practice in Washington state. Recognizing that pharmacists were both underutilized *and* the most accessible health care providers, **Jackie Gardner** and **Don Downing**, '75, worked together to expand what a pharmacist could do. They began with advocating for and training pharmacists to administer vaccinations—now a nationwide and growing global practice. Don and Jackie went on from that success to develop the nation's first pharmacist-provided

"Pharmacists are the medication experts on the health care team and in the community. Thanks to our work, in addition to improved care at hospitals and clinics, busy people can just pop into their local pharmacy to get the care they need."

DON DOWNING, '75, I2P2 ENDOWED CLINICAL ASSOCIATE PROFESSOR

emergency contraception program and the first pharmacist-initiated ongoing hormonal contraception services. In 1995, the "Every Category of Health Care Provider Law," was passed, stating that private insurance companies could not exclude licensed providers from their networks, so long as the services provided were within the scope of their license. Initially not considered eligible under this Act, Don advocated for pharmacist inclusion. In 2013, he petitioned the Washington State Insurance Commissioner and the Attorney General to issue legal opinions that Pharmacists had to be included. He followed those supportive opinions with advocating for legislation that required insurers to compensate pharmacists for their clinical work, not just drug dispensing. That legislation passed successfully in 2015.

The increased access to care provided by pharmacists has been supported by the alumni-supported Institute for Innovation in Pharmacy Practice (I2P2) Endowment.

1978

MILO GIBALDI APPOINTED DEAN

Dean Gibaldi established the Dean's Club and the first endowed professorship, as well as a dramatic increase in much-needed private funding for the School.

1980

DEAN GIBALDI SPLITS PHARMACEUTICAL SCIENCES

Dean Gibaldi splits the science department and establishes the Department of Pharmaceutics and Department of Medicinal Chemistry.



Jackie Gardner

EPIDEMIOLOGIST & LEGENDARY ADVOCATE FOR INCREASED ACCESS TO CARE

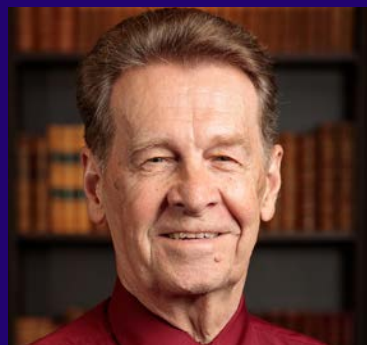
Jackie was co-director of the Retail Pharmacy Management Program and led the Institute for Innovation in Pharmacy Practice (I2P2)—the I2P2 fund was later named after her—in addition to being an early PORPP faculty member. She worked as a pharmacy technician, which inspired her strong advocacy for expanding pharmacy services to include immunization, contraception, and other value-added care. “Jackie changed the profession of pharmacy and the way individual pharmacists embraced patient care,” said Don Downing.



Don Downing, '75

ADVOCATE FOR PHARMACY AND WOMEN'S REPRODUCTIVE HEALTH

After graduating from UWSOP, Don was asked by the Puyallup Tribe to help them open up a tribal health clinic – a clinic where he remained for the next 10 years. He developed the nation's first pharmacist-provided emergency contraception program and the first pharmacist-initiated ongoing hormonal contraception services. He also helped lead the effort in the 1990s to educate and certify pharmacists in Washington state and numerous other states to provide flu shots and other vaccines.



Tim Fuller, '69

FATHER OF PHARMACIST COLLABORATIVE DRUG THERAPY

Tim was instrumental in the process to create collaborative drug therapy agreements. He began with a study of the 60 prescriptive authority protocols that were filed in the Board of Pharmacy office, showing an overwhelmingly positive response by physicians and pharmacists to pharmacists prescribing in collaboration with physicians. He worked with pharmacists to expand this practice. His book, *The Handbook of Collaborative Drug Therapy*, provided templates for pharmacists to use. He is the 2018 PAA Distinguished Alum.



Jennifer Bacci

ASSISTANT PROFESSOR & COMMUNITY PHARMACY RESEARCHER

Jennifer's primary research interest focuses on the application of implementation science to evaluate and advance the adoption and reach of innovative patient care models in community pharmacy practice, including being co-investigator on PROJECT VACCINATE with Peggy Odegard. The team saw a 14% increase in the number of influenza, pneumococcal, herpes zoster, and pertussis vaccinations in just one year as a direct result of their work, which was supported by the Centers for Disease Control and Prevention (CDC) and National Association of Chain Drug Stores (NACDS).

SMALL MOLECULES, BIG HEALTH SOLUTIONS

The story of the Department of Medicinal Chemistry is of a multi-generational approach to solving big problems in population health.

Understanding and breaking down the mysteries embedded in small molecules and their mechanics is an effort that takes generations, not years, and one that accelerates as technology improves. No better place can that acceleration be seen than in the UW Department of Medicinal Chemistry. Originally one department of pharmaceutical sciences, Dean **Milo Gibaldi** split it into pharmaceuticals and medicinal chemistry to distinguish the disciplines. Looking back over the decades, we can see the Med Chem community like a family tree. Faculty member **Alain (Al) Huitric** was a pioneer in applications of proton nuclear magnetic resonance (NMR), recognizing its use for solving problems of structural organic chemistry, and was a mentor to many. Dean Emeritus **Sid Nelson** said Al inspired him to pursue teaching and research. **Bill Trager** received his PhD in Med Chem under Al's direction and Bill, Sid, and **Allan Rettie** all worked in his lab. Forty years ago, Al secured funding for an NIH National Institute of General Medical Sciences (NIGMS) pharmacological sciences predoctoral training grant, which has been a significant source of support for our graduate students. It is the longest continually running grant in UWSOP history. Training grants like this, research grants, and private support are critical with the waning of state support for research training. The UWSOP Corporate Advisory Board, one of the first corporate boards at the UW and vital partnership, was founded just over twenty years ago and brings our faculty and students together with leaders in the pharmaceutical industry, to enhance collaboration, training, networking, and research opportunities. With its roots in the leadership of the Med Chem chairs Bill, **Wendel Nelson**, Allan, **Kent Kunze**, and **Bill Atkins**, Med Chem has trained graduate students and post docs who are now leaders in industry and academia, including: **Larry Wienkers**, '93, who went to Amgen and is a global leader in P450-related drug metabolism

“Our network of faculty, alumni, and students is working to solve problems that affect millions of people worldwide: dementia, HIV, influenza, and other therapeutic areas. We train people to work at the molecular level to find better therapies and increased insight into these conditions.”

BILL ATKINS, SID AND JOAN NELSON ENDOWED PROFESSOR AND CHAIR, UW DEPARTMENT OF MEDICINAL CHEMISTRY

research; **Cyrus Khojasteh**, '98, an internationally recognized expert in drug metabolism and pharmacokinetics and the first drug metabolism expert at Genentech; Pharmacy assistant professor **Cathy Yeung**, '05, part of the Kidney on a Chip team; and **Klarissa Jackson**, who trained with Sid Nelson and Allan Rettie and went on to earn the first NIH grant in the history of Lipscomb University and is now at University of North Carolina College of Pharmacy. Med Chem continues to grow and thrive with innovative researchers like **Rheem Totah**, **Abhi Nath**, '08, **Libin Xu**, **Kelly Lee**, and **Mike Guttman**, who was a post doc in the Lee Lab.

Mass Spectrometry

In the late 1970s, applications of mass spec technology to drug metabolism and pharmacokinetics became more prevalent, leading **Bill Trager** and **Bill Howald** to establish the UW Mass Spec Lab. When **Tom Baillie** joined Med Chem, he and Bill Howald acquired the latest equipment to support research across both departments, developing the interdisciplinary UW Mass Spectrometry Center.

1981

MASS SPEC CENTER ESTABLISHED

The Center is an open-access self-sustaining instrument laboratory providing a wide variety of mass spectral services to the University and the research community-at-large.

1986

PLEIN CERTIFICATE IN GERIATRIC PHARMACY BEGINS

The Plein Certificate prepares pharmacists to be specialists in geriatrics and meet the needs of older adults in all practice settings

1994

SID NELSON, '68, APPOINTED DEAN

Dean Nelson helped UWSOP become internationally recognized for outstanding achievement in drug metabolism and disposition, drug interactions, outcomes research, and geriatric and patient-care practice programs.

USING GENETICS TO DECODE WARFARIN

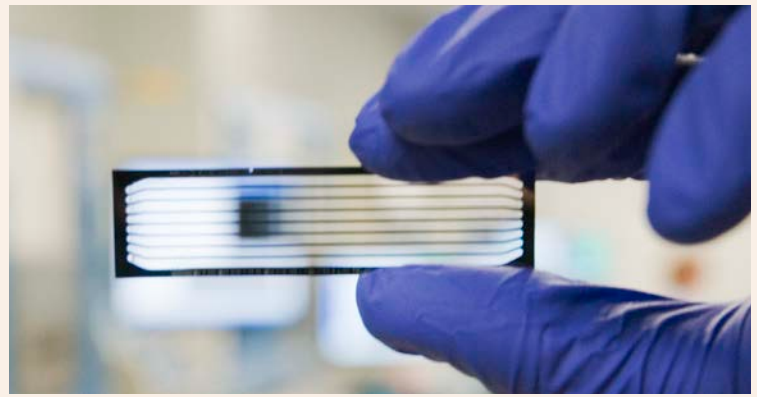
A collaboration between Medicinal Chemistry's Allan Rettie and CHOICE's Dave Veenstra turbocharged the race to improve warfarin therapy using patients' genetic information.

The potential impact of personalized medicine launched here at UW School of Pharmacy about twenty years ago, when **Dave Veenstra's** graduate student **Mitch Higashi**, '01, assembled a 200 member cohort of warfarin patients to study genetic factors influencing their drug response. They partnered with **Allan Rettie** in Medicinal Chemistry to go deeper.

Warfarin (Coumadin™) has been a vital medication for many decades and used to prevent harmful clotting after a heart attack, stroke, or major surgery. There are risks with taking warfarin and patients taking the drug have to follow a strict regimen, including regular testing to ensure the dosing is correct.

"There is a narrow window between too much and too little effect," explained Allan. "A small change in dose can have quite a large effect on blood processes." If a patient's dose is too high, it can cause excessive bleeding. Too low, and it can cause blood clotting. Getting that dose in the Goldilocks 'just right' zone has been a challenge for physicians and pharmacists for decades. Thus, there was great interest in being able to use emerging genetic testing technology to improve dosing for different populations for such an important drug.

The landmark paper by Mitch, Dave, Allan, and the UW research team, on the influence of CYP2C9 genetics on warfarin dosing was published in the *Journal of American Medical Association (JAMA)* in 2002. In 2005, the interdisciplinary team at UW School of Pharmacy led by Allan and Dave, which included Pharmaceutics' **Ken Thummel**, '87, identified an additional major genetic factor that led to significant shifts in



how patients on the drug were dosed and monitored. The team identified a single gene, vitamin K epoxide reductase (VKORC1), which makes a protein that helps control clotting and is the key target of warfarin, as being responsible for 25% of the variance in warfarin dosages. Their discovery provided some explanation as to why certain people require a lower or higher dose of the drug.

The finding became a star in the case for personalized medicine—shifting medications and dosing based on a patient's genetic profile. A few years later, the FDA revised warning label information on warfarin to raise physician awareness about the genetic impact.

Later studies continue to refine the team's 2005 findings. In 2014, a team including Allan, Ken, Dave, and alumni **Joshua Roth**, '12, and **Denise Boudreau**, '02, completed the largest study of warfarin pharmacogenomics and major bleeding. They found a common CYP4F2 variant was associated with a 38% reduction in risk of major bleeding, potentially reflecting an interaction with warfarin and dietary vitamin K intake.

Research into the benefits of genetic testing continues with PharmD/PhD graduate student **Lindsay Henderson's** research, with Allan, Ken, Dave, and others. Lindsay is first author on a paper looking at the unique pharmacogene variation that Alaska Native and American Indian (AN/AI) people have may affect warfarin disposition and therapeutic response. Her research shows promise for improving health outcomes for Alaska Native and American Indian people by using genetic testing.

Pharmacogenomics shows great potential to improve population health. Putting together the pieces of these genetic puzzles with consideration to the broad diversity of population health and managing the costs to substantiate the value of testing, continues to drive researchers at UW School of Pharmacy and beyond.

1995

PHARMACEUTICAL OUTCOMES RESEARCH & POLICY PROGRAM (PORPP) FOUNDED

The internationally-renowned program had its start in a student request for a PhD program in Pharmacy.

1995

FIRST PAA DISTINGUISHED ALUMNI IN PHARMACEUTICAL SCIENCE & RESEARCH AWARD

William Stavropoulos, '67, is the first to receive the new alumni award.

1998

BRAMS ESTABLISHED

The Biomedical Regulatory Affairs (BRAMS) program trains professionals to effectively manage the process of bringing new medical products to market.

CONTINUING A GREAT TRADITION of SCIENTIFIC EXCELLENCE

The Department of Pharmaceutics has long been on the vanguard of scientific discovery, working collaboratively across school and university disciplines to solve tough problems.

The researchers in the Department of Pharmaceutics are international leaders for their expertise in drug metabolism and transport kinetics. Pharmaceutics faculty are innovators in targeted drug delivery, physiologically-based pharmacokinetic modeling, and microphysiologic human organ systems. But it's more than that. They lead in collaboration and Team Based Science.

At the 2019 Graduate Symposium honoring **Bill Trager, Danny Shen**, and **Bill Howald**, former Chair and Faculty Emeritus **René Levy** reflected on the Team Based Science legacy of Bill, Danny, and Bill. Historically, scientists trained with a single mentor. René shared that the close quarters in Bagley Hall, and now in the Health Sciences Building, have led to an affable atmosphere, with a team-based approach being the norm.

The department began in the early 1980s when Dean **Milo Gibaldi** split the pharmaceutical sciences and created the departments of Pharmaceutics and Medicinal Chemistry. René served as chair for 26 years. He taught pharmacokinetics and biopharmaceutics, established the UW's Epilepsy Center as well as the Drug Interaction Database, now known as Drug Interaction Solutions, and led the important work of establishing the department. Under his leadership, the department grew to 7 full time faculty, 5 part-time faculty, 16 post doc fellows, 20 graduate students, and annual extramural funding totaling about \$2.7 million.

In 2006, René returned to faculty and **Ken Thummel** was appointed Chair. Over 13 years until he decided to return to faculty in 2019, Ken led the Department's annual research funding to grow at \$13.6 million, with over 100 departmental personnel working collectively to meet instructional, research and service missions. Some of the breakthrough research includes Ken's collaborative work on the NIH Pharmacogenomics

Research Network (PGRN), Ken and Danny's intercollegiate Natural Product Drug Interaction (NaPDI) Center, **Jash Unadkat**, **Nina Isoherranen**, and **Quincheng Mao**'s research looking at drug disposition during pregnancy, **Shiu-Lok Hu**'s work on an HIV vaccine, **Rodney J.Y. Ho**'s TLC-ART program, and Kidney on a Chip, co-led by **Ed Kelly**. These successes are a key reason why we are ranked #3 in NIH grants among Schools of Pharmacy.

On July 1, 2019, Dean **Sean D. Sullivan** appointed Nina to the Milo Gibaldi Endowed Chair of Pharmaceutics. Nina's appointment makes her the first woman to chair the department.

The decades of strong leadership in the Department of Pharmaceutics has meant many top scientists and academic and industry leaders are among our alumni, including: American Association for the Advancement of Science Fellow **Deanna Kroetz**, '90, drug delivery device innovator and inventor **John Hoekman**, '10, and industry leaders **Ping Zhao**, '02, and **Punit Marathe**, '89.

Drug Interaction Database

Recognizing the need for more widespread knowledge about the risks of drug interactions, René set out to build a curated database of drug interaction in the 1990s. Now known as Drug Interaction Solutions, the database is a research tool used widely by the pharmaceutical industry, academic researchers, and the FDA. Since René's retirement, the database has been under the leadership of **Isabelle Ragueneau-Majlessi**. The database team produces a commercialized software product licensed by the University to pharmaceutical companies and other academic and clinical programs worldwide. The database produces annual revenue in excess of \$1.0 million and supports graduate student training in the pharmaceutical sciences arena.

1998

CORPORATE ADVISORY BOARD FOUNDED

Leading industry volunteers provide support, advice, advocacy, and corporate funding leadership for the School of Pharmacy.

LATE 1990s

DRUG INTERACTION DATABASE ESTABLISHED

UW pharmacokinetics-based Drug Interaction Database, now called Drug Interaction Solutions, is internationally recognized as an authoritative, unbiased, and transparent research tool.

2000

MARY HEBERT FOUNDS OBSTETRIC-FETAL PHARMACOLOGY RESEARCH UNIT (OPRU)

OPRU is dedicated to the optimization of medications during pregnancy and lactation. Their goal is to understand how the body handles and responds to drugs during pregnancy.

IMPROVING CARE for ALASKA NATIVE PEOPLE

One of the University of Washington's significant population health projects began ten years ago with a collaboration led by Pharmaceutics Professor **Ken Thummel** and **Wylie Burke**, professor of Bioethics and Humanities in the UW School of Medicine. The multidisciplinary research group with faculty from the Departments of Bioethics and Humanities, Epidemiology, Biostatistics, Genome Sciences, Medicinal Chemistry, Laboratory Medicine, and Pharmacy, joined a nationwide network of scientists through the National Institutes of Health (NIH) to study how genes affect individual response to medicines.

The mission of the National Institute of Health's Pharmacogenomics Research Network (PGRN) is to catalyze and lead research in precision medicine for the discovery and translation of genomic variation influencing therapeutic and adverse drug effects. The NIH grant was one of 14 nationwide— totaling \$166.3 million.

Ken and Wylie have used their NIH funding (\$18 million over 10 years) to create a center to study pharmacogenomics in American Indian and Alaska Native (AI/AN) and rural Pacific Northwest populations. Their goal is to reduce barriers that limit the inclusion of American Indian and Alaska Native people in pharmacogenomic research, and to expand the knowledge base of pharmacogenomic variation, so that these traditionally underserved communities, and their healthcare providers, have increased opportunities to evaluate the merits of prospective pharmacogenetic testing and introduce advances into clinical practice.

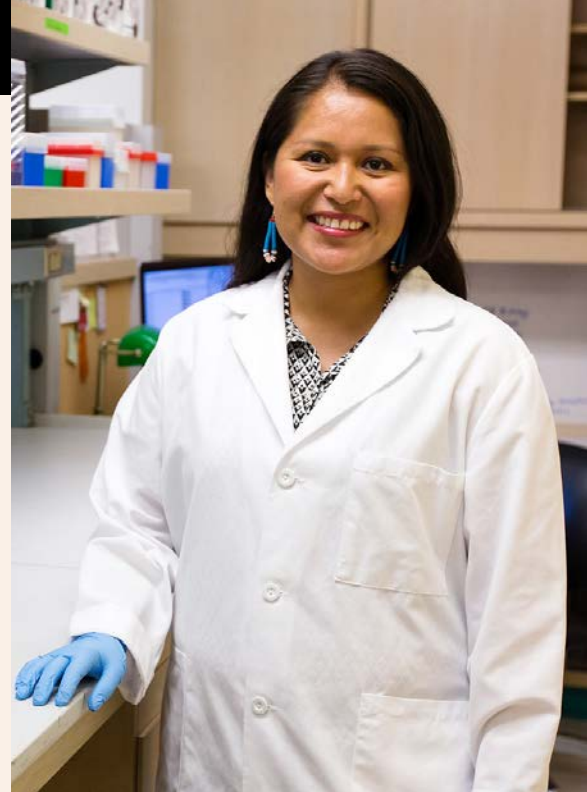
Tribal communities have historically been overlooked in health-related research, or research was often conducted without

their input or oversight, and with little data sharing afterward. "Given this history, a major component of our work is to restore trust between research communities and tribal communities," said Ken. "We are doing this not only by working with tribal elders and members and their healthcare providers, and seeking their input on procedures, but also by being as transparent as possible."

The center's research initially focused on genetic variables influencing drug therapy with the blood thinner warfarin, the anti-estrogen tamoxifen, and the immunosuppressant tacrolimus. Through additional grant support from NIH, NWA-PGRN center post doc researcher and Navajo Tribe member **Katrina Claw** focused on nicotine metabolism to support smoking cessation and the metabolism of Vitamin D.

Vitamin D deficiency is a public health problem, particularly for northern latitude indigenous populations. Limited sunlight exposure and a shift to Western diets and lifestyles may be some of the driving causes of insufficiency, but gene variation modifies individual risk. As more Alaska Native and American Indian people suffer from vitamin D insufficiency, there may be increases in pathologies like cancer, heart disease, and bone disease.

In their latest round of NIH funding, NWA-PGRN investigators continue to partner with AI/AN communities in Alaska and Montana to conduct research on different pharmacogenes, including those that affect anticoagulation and antiplatelet therapies for the treatment of cardiovascular disease. They are also examining diet, as an additional modifier of anticoagulation and antiplatelet drug responses.



Katrina Claw, PhD

POST DOC & MLK SERVICE AWARD WINNER

Katrina's research has focused on pharmacogenomics and the ethical implications of genomic research in Indigenous communities. Her projects focus on hepatic variation, tobacco pharmacogenomics, and perceptions of genetic research in American Indian communities. Working with tribal partners in the Northwest-Alaska Pharmacogenetic Research Network (NWA-PGRN), Katrina's NIH fellowship research seeks to identify and functionally characterize variation in genes related to vitamin D metabolism. One of her projects is qualitative and has focused on examining the perspectives of American Indian tribes regarding genetic/genomic research. There is a history of research misconduct with Indigenous populations, and her work has examined attitudes and perspectives of tribal members with the eventual goals of developing community-driven genetic research projects and policies.



TRAINING TO PRACTICE at the TOP OF THEIR LICENSE

UW School of Pharmacy's PharmD program trains pharmacists to think critically and be prepared for a future of health care that requires the advanced skills and knowledge of the Husky Pharmacist.

As the UWSOP Strategic plan comes into its fifth year, we are launching the new Husky Pharmacist curriculum. This approach to pharmacy training makes the UW one of the few schools of pharmacy nationwide that offers experiential training from the start of our student pharmacists' first year. Not only that, but our students won't just be observing as is the case in some other first year experiential programs, they will be working directly with patients, learning to interview, gathering information, considering the patient's holistic needs, and gaining critical continuity in their learning with application to practice from the classroom. This novel approach to training prepares our student pharmacists to be active members of the health care team in the new age of Pharmacist Provider Status here in Washington state. Over the past several years, the Curricular Innovation team, led by Associate Dean **Peggy Odegard**, '85, '90, developed a plan to prepare our student pharmacists for a future that calls for more leadership, entrepreneurial skills, even community-building and advocacy—in addition to the excellent training they already receive in medicinal chemistry, pharmacology, clinical pharmacy, and patient care. Whether it's to be full members of the health care team or to pitch a new approach to patient care, to manage an independent pharmacy, or to lead a health system, our student pharmacists' professional and interprofessional skills need to be as strong as their scientific knowledge. Research shows that learning gained through direct experience is the most powerful for health providers' training experience. As more people take medications to manage their health, Washington state recognized the vital role of the

“The UW School of Pharmacy is one of the first pharmacy schools in the U.S. to offer hands-on experiential training to student pharmacists from the start through the transformative Wednesdays in Practice and Provider Readiness series.”

PEGGY ODEGARD, ASSOCIATE DEAN AND LYNN AND GERALDINE BRADY ENDOWED PROFESSOR OF PHARMACY

pharmacist in improving patient care and health outcomes. Chronic health conditions, such as diabetes and hypertension, are primarily treated with medications—and viruses like HIV and Hepatitis C are now chronic or curable illnesses, rather than terminal diseases, thanks to advancements in medications.

In addition, the new curriculum places high value on the learning that occurs both inside and outside the classroom—for formalizing training in leadership and professional development, advocacy, and innovation and valuing the extensive experience and perspective our students gain through student organizations, at health fairs, and by stepping into the community through events and engagement. Being a leader is different from being a manager, Peggy emphasized. “When our Husky Pharmacists see gaps and opportunities, we want them to step up and advocate for the benefit of the patient.”

2005

BILL FASSETT FIRST PUBLISHES WA STATE LAW TEXT

Bill's book, *Washington Pharmacy Law: A User's Guide*, becomes essential reading for everyone working in pharmacy in Washington state.

2008

TOM BAILLIE APPOINTED DEAN

After 14 years in industry, the former Med Chem faculty member returns to UWSOP as Dean at a critical time: just prior to the Great Recession and re-accreditation.

2008

PHARMACY PRACTICE ADVISORY BOARD FOUNDED

Consisting of dynamic leaders across various pharmacy disciplines, the board provides a strong two-way link between the School's Doctor of Pharmacy degree program and the pharmacy practice community.

INVESTING in THE HUSKY PHARMACIST

Extraordinary generosity equals extraordinary impact and the support provided by the Wallace family, Kathy McDonough & Dennis Yamamoto, and Richard & Susan Coar are no exceptions. Their remarkable gifts will create increased opportunities for our student pharmacists and faculty researchers who are striving every day to build a better future for us all.

The gift from **Bette and Bryan Wallace**, '39, will bolster UWSOP and support student pharmacists. Bryan Walker Wallace was born on February 10, 1916. After graduating from UWSOP, Bryan was a pharmacist with Walgreen Drug Company and then Bartells. His wife, Elizabeth (Bette) Ruth (Stadler), was born in 1924 in Montana. In 1954, they opened their own drug store, Bryan's Drug, in Mountain View, California, and later another store in Morgan Hill. "My Aunt never forgot the impact the School had on my uncle and she wanted to honor his wishes to support the School," said Bette's niece, Cheri Ryan.

Kathlyn McDonough, '80, '93, and her husband **Dennis Yamamoto** have generously established support for UWSOP students and research. Kathy earned her BSP Pharm and PharmD at UW and went on to work as a clinical pharmacist at Group Health and the VA in Palo Alto,

and later recently got her dream job researching drug-drug interactions at First Databank. She was energized and rewarded by her work with patients and new students. The Kathy McDonough and Dennis Yamamoto Endowed Scholarship in Pharmacy will support students with financial need and their Research Endowment in Pharmacy will support research in clinical pharmacology and clinical pharmacokinetics with a priority on drug interactions.

The **Richard O. Coar**, '54, and **Susan P. Coar** Endowed Fund for Pharmacy Excellence will support student scholarships and innovative ideas, programs and research. Their generous gift will support students' tuition, books, and other educational expenses. The innovation funds will make possible support for the kind of breakthrough advances made possible by the UWSOP Faculty Innovation Fund.



The Husky Pharmacist

LEADERSHIP, KNOWLEDGE, & SKILLS

DEMONSTRATES EXPERTISE in medications, population health, and practice—that is both fundamentally sound and state-of-the-art

THINKS CRITICALLY, prioritizes effectively, identifies solutions

Has **STRONG DECISION-MAKING SKILLS** and the ability to justify those decisions

WORKS COLLABORATIVELY with other healthcare professionals and appreciates the value of working as a team

DEMONSTRATES LEADERSHIP, professional engagement, and management skills

ADAPTS AND THRIVES as the profession of pharmacy, health care and society evolve

COMMUNICATES WELL

2010

PEGGY ODEGARD NAMED CHAIR OF PHARMACY DEPARTMENT

Peggy becomes the first female department chair in School history and the first Shirley & Herb Bridge Professor of Pharmacy.

2012

JASH UNADKAT FOUNDS UWRAPT

University of Washington Research Affiliate Program on Transporters (UWRAPT) is a research collaboration between academia and pharmaceutical industry to better understand inter-individual variability in pharmacokinetics and pharmacodynamics of drugs.

A COMMITMENT to HEALTHY AGING



In just a few years, the interdisciplinary Plein Center for Geriatric Pharmacy Research, Education and Outreach has already had a global impact, thanks to the Pleins' generosity.

In just a few years, the Plein Center for Geriatric Pharmacy Research, Education and Outreach has already had a global impact thanks to the groundbreaking gift from geriatric pharmacy pioneers, **Joy**, '51, '56, and **Elmer Plein**. The Pleins continued their commitment to advance geriatric research and education by the establishment of the Plein Center for Geriatric Pharmacy Research, Education and Outreach in 2016.

The innovative Plein Center brings together an interdisciplinary team of faculty, researchers, practitioners, and students to investigate and solve the complex health problems facing older adults. Over thirty years ago, Joy established the Plein Certificate in Geriatric Pharmacy to train student pharmacists in best practices in older adult care. The Certificate has led to multiple partnerships with area senior living communities, such as Era Living and others, who create experiential training opportunities for our students, as they and our faculty provide medication expertise and consultation for community residents.

In just a few years since the establishment of the Plein Center, we have seen significant advances in the discovery and optimal use of medications in older adults from Center researchers. Director **Shelly Gray** followed her breakthrough research into the link between anticholinergic medications and dementia with an award from the Journal of the American Geriatrics Society for her study that showed there was no link between Proton Pump Inhibitors (PPIs) and dementia. In 2018, Shelly and UW Medicine's **Elizabeth Phelan** received a \$3M grant for STOP FALLS, an intervention study that focuses on deprescribing

“We are creating a new path for older adults so they are better informed about their medications.”

SHELLY GRAY, DIRECTOR OF THE PLEIN CENTER AND THE SHIRLEY AND HERB BRIDGE PROFESSOR ENDOWED PROFESSOR OF PHARMACY

high-risk medications, such as opioids and benzodiazepines, with the goal of reducing falls in older adults.

Assistant Director for Research and Bailey Faculty Fellow **Zach Marcum** is the first pharmacist researcher to receive the NIH/ National Institute on Aging Paul B. Beeson Emerging Leaders Career Development Award. This prestigious award has historically only been granted to physicians. The 3-year award will support Zach's breakthrough work in the effect of antihypertensives on the aging brain. Zach also led a team on a letter to the editor about the safe use of marijuana in older adults. Marijuana use among older adults has soared in recent years despite little being known about the drug's effectiveness and safety in people 65 and older. The team made recommendations for safer use.

Assistant Director for Education for the Plein Center, **Leigh Ann Mike**, continues to be featured in stories about healthy aging for a variety of publications, including *Consumer Reports* and the *American Association of Retired Persons (AARP) Bulletin*. A nationally-recognized expert on deprescribing, Leigh Ann has become a spokesperson for the role pharmacists can play in improving health and maintaining independence for older adults.

2014

SEAN D. SULLIVAN APPOINTED DEAN

A pharmacist by training, Sean held numerous leadership roles at UWSOP before becoming Dean. He grew the PORPP program to become the premier outcomes research and policy program.

2014

FEMALE PHARMACISTS BREAK THE GLASS CEILING

In 2014, for the first time in Washington state, there are more women than men who are licensed pharmacists.

2015

WASHINGTON SB 5557 PASSES

Washington became the first state in the U.S. to require that pharmacists are included in health insurance provider networks, increasing patient access to care—particularly in rural and underserved areas.

DAVID BAILEY on CREATING JOY

Alumnus David Bailey, '70, shares about the value and impact of the process of making his family's gift to the Plein Center.

A few years back after retirement, I began to think back to all that I had learned at the SOP along with **Elmer** and **Joy Plein**'s guidance and how I was able to use those experiences in my career. I realized with the support of my wife Anita that it was "payback time." I wish to share our experience and process at arriving at a "giving plan" that has been going on for us over the past five years.

We had a general idea in mind of how we wanted our gifts to be used and with the help of Assistant Dean of Advancement, **Claire Forster**, drew up a foundation document incorporating our wishes. We made an initial gift to fund the foundation and pledged an additional amount to be given in five annual gifts. We thought it important to stay involved by maintaining contact with those who benefited from the gift, but more important to experience how we were benefiting from something bigger than ourselves. We have seen our gift used to provide seed money to fund a new faculty member whose teaching and research coincided with our foundation's objectives. Now comes the "Joy" part. I wish to explain this with help from the thoughts of David Brooks

who recently included much about joy in his column in the *New York Times* and his recent book *The Second Mountain*: "There are two kinds of emotion present at any graduation ceremony. For the graduating student there is happiness. They have accomplished something. There is a different emotion up in the stands among family and friends. That emotion is joy. They are not thinking about themselves. Their delight is seeing...the blooming of a whole person." Anita and I see ourselves now as the family in the stands and our foundation as the graduate. We discovered both happiness and joy through our gifts and learned to appreciate both emotions. "Happiness usually involves a victory for the self. Joy tends to involve the transcendence of self. Happiness comes from accomplishments. Joy comes when your heart is in another. Joy is the present that life gives you as you give away your gifts."

We are profoundly grateful for the generosity of David and Anita Bailey. Their commitment to the UW School of Pharmacy will enable the continuation of the leading edge research that is a hallmark of the Plein Center for Geriatric Pharmacy Research, Education & Outreach.



DAVID AND ANITA BAILEY WITH JOY PLEIN



John Hoekman, PhD, '10

INNOVATING DRUG DELIVERY

While a grad student in **Rodney JY Ho's** lab, John invented a brain drug delivery concept called the Precision Olfactory Delivery™ (POD™) nasal delivery platform. He has since worked with Rodney to establish Impel NeuroPharma, Inc., a Seattle-based clinical stage biotechnology company. The POD™ drug delivery device is intended to achieve biodistribution, bioavailability, and decreased dose-to-dose variability in patients by delivering the dose deep into the nasal cavity, thereby delivering a more consistent, higher concentration of the drug to the brain. The device could significantly improve treatments for neurological disorders such as migraine, Alzheimer's, and Parkinson's disease.



USING DATA AND ECONOMICS to TRANSFORM HEALTH

Celebrating 25 years, The CHOICE Institute continues to grow and transform, expanding its impact on population health.

The Comparative Health Outcomes, Policy & Economics (CHOICE) Institute at UWSOP began largely out of a response to a student and workforce needs. In 1989, **Andy Stergachis**, now Associate Dean at UWSOP, was advising **David H. Smith**, '90, '98, who wanted to earn a PhD studying the impact of health-care policies on population health. At that time UW did not offer a Pharmacy PhD, so David created his own interdisciplinary program of study. Andy and Dean **Milo Gibaldi**, decided to create a doctoral program in Pharmacy. In 1990, Andy was awarded the Burroughs Wellcome/American College of Preventive Medicine Scholar in Pharmacoepidemiology Award, which provided much-needed seed funding for the program, including support for visiting faculty, such as epidemiologist **Jackie Gardner**, PhD, and a newly-minted PhD from UC Berkeley named **Sean D. Sullivan**. When Sean and Andy first met, Sean was looking forward to his new position at Wolfson College at Oxford University. But fate (and Andy) had a different plan. Andy presented Sean with the vision of a world-class program in pharmaceutical outcomes research. Sean was intrigued. When Andy showed up—in person—at Berkeley a few weeks later, Sean said yes to Andy and then, "I had to write the most difficult letter of my professional career. After all, who says 'no' to Oxford? But it changed my life." Sean and Jackie joined the faculty team with **Dale Christensen** and **Bill Fassett**, '69. The development of the new Pharmacy PhD program began in earnest. About 25 years ago, the team had attracted top scholars and built enough support to be officially designated the Pharmaceutical Outcomes Research and Policy Program (PORPP) at the UW. In 2014, Sean became Dean of UWSOP, which meant finding a new Director, now named the Stergachis Family Endowed Director,

“ At CHOICE, we work to advance the study of health economics, pharmaceutical outcomes research, and policy to improve population health in the U.S. and around the world.”

ANIRBAN BASU, STERGACHIS ENDOWED DIRECTOR, CHOICE INSTITUTE

thanks to a generous gift from Andy and **JoAnn Stergachis**. **Anirban Basu**, Ph.D, was selected and in 2017, he announced the launch of The Comparative Health Outcomes, Policy & Economics (CHOICE) Institute, an expansion of PORPP that organizes research and training activities and resources in the fields of health economics, policy analysis/big data sciences, economics of precision medicine, drug and vaccine safety, and global medicines issues. CHOICE continues to thrive with world-class researchers and leaders in health economics like Professor Emeritus **Lou Garrison**, Professor **Dave Veenstra**, Professor **Beth Devine**, Associate Professor **Josh Carlson**, Associate Professor **Aasthaa Bansal**, who earned a prestigious 7-year NIH MERIT Award, 2011 PAA Distinguished Alumni Award recipient **Ryan Hansen**, '03, '12, Research Assistant Professor **Doug Barthold**, **Shelly Gray** and **Zach Marcum** from the UW Plein Center, and many more affiliates and leaders in outcomes and health economics research. CHOICE Alumni have become leaders in academia, industry, and government, such as **Jonathan Watanabe**, '98, '08, '12, faculty member at UC San Diego and the first pharmacist named to the National Academy of Medicine Emerging Leaders in Health and Medicine Scholars Program, and **Mitch Higashi**, '01, who established the Health Tech Fund, and now is an industry leader.

2016

PLEIN CENTER ESTABLISHED

The Plein Center for Geriatric Pharmacy Research, Education & Outreach expands our role as leader in outreach and research to promote healthy aging.

2016

UW PHARMD/MBA DEGREE BEGINS

UWSOP and UW Bothell School of Business partner to offer a PharmD/ MBA degree.

2017

THE CHOICE INSTITUTE ESTABLISHED

Director Anirban Basu announces that PORPP has expanded to become The Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute.

GOING IN-DEPTH TO CHANGE EPILEPSY

In the last few years, the research tradition that began with René Levy and Gail Anderson continues by growing the depth and breadth of research to improve outcomes for patients with seizure disorders.

Worldwide, it's estimated there are about 20 million people with epilepsy who have seizures that are not well controlled—making this an understudied population health issue. UWSOP has a tradition of researchers innovating therapies and treatment plans for people living with the condition.

René Levy is a global leader in improving drug safety for all people, particularly those with epilepsy. He joined the faculty in 1970 to initiate teaching in the areas of pharmacokinetics and biopharmaceutics and co-founded the NW Regional Epilepsy Center. René is a pioneer in understanding the molecular processes underlying the metabolism of antiepileptic drugs, research leading to a rational approach to predicting drug-drug interactions and mechanisms of drug toxicity. He provided seminal insights that have accelerated the search for new epilepsy drugs and improved clinical practice in the treatment of patients with epilepsy.

Gail Anderson, '78, '81, '87, earned her BSP Pharm, MS, and PhD in Pharmaceutics at UWSOP. Throughout her career, Gail conducted research to improve the understanding of drug treatment options and health outcomes for people with brain injuries and epilepsy. She has taught clinical pharmacokinetics and antiepileptic drugs to students across the health sciences. In 2009, she received an NIH Research Project Grant for \$3.3 million for a study of poly-drug therapy for traumatic brain injury. In 2011, Gail received the UW Pharmacy Alumni Association's Distinguished Alumni in Pharmaceutical Science and Research Award. She was honored as a Fellow of the American Epilepsy Society (AES) in 2018.



H. Steve White is a leader in the discovery of drug therapies to treat and manage epilepsy. Over the last 30+ years, Steve and his collaborators have contributed to the early identification of several new drugs for epilepsy, profoundly affecting the global treatment of adults and children with epilepsy. Recently, Steve has been investigating the effect medication adherence has on seizures and initiated a novel preclinical approach to study the effects of poor adherence. Due to their accessibility and expertise, pharmacists are well-positioned to address medication adherence with their patients with seizure disorders.

Steve, **Jennifer Bacci**, and CHOICE PhD student **Sabra Zarâa**, received one of the 2019 pilot research grants awarded by the UW Population Health Initiative, for their project, "Community pharmacist integrated population health management of people living with epilepsy." The experiences of a person with epilepsy involve managing multiple co-existing health conditions and taking anti-seizure drugs, which are often accompanied by significant adverse effects. The problem is that healthcare and community services are often fragmented and uncoordinated. Community pharmacists are among the most accessible and trustworthy healthcare providers with extensive knowledge of drug therapy. The intervention developed from this project could lead to important breakthroughs in how epilepsy is managed.

Patients with early-onset Alzheimer's have the highest risk for seizures, but even patients with late onset Alzheimer's disease are at high risk. Little is known about how genes associated with Alzheimer's disease may affect a person's susceptibility to seizures across their lifespan and less is known about whether anticonvulsant drugs, which, historically, have been tested in young-adult animal models, are effective and well-tolerated in older populations. Plein Center researcher and neuropharmacologist **Melissa Barker-Haliski** hopes to answer this question using preclinical mouse models with Alzheimer's disease-associated genetic risk factors.

2019

KIDNEY ON A CHIP GOES TO THE INTERNATIONAL SPACE STATION..AND BACK

24 microphysiological chips are launched into space to see how microgravity's accelerative aging effect changes the kidney cells, giving our scientists insight into how kidney conditions begin.

2019

NINA ISOHERRANEN BECOMES CHAIR OF PHARMACEUTICS

Nina named the Milo Gibaldi Endowed Chair of Pharmaceutics and is the first female chair of the department.

A COMMITMENT to the END OF HIV/AIDS



Shiu-Lok Hu's work began decades ago in utter frustration with a powerful and unknown virus and continues today...with promising new leads and a novel approach to creating an HIV vaccine.

Vaccines save lives. When the human immunodeficiency virus (HIV) was identified, there soon followed calls to create a vaccine. If we can have vaccines for influenza, mumps, measles and other viruses, it seems logical that we could have one for HIV as well.

But HIV presents a significant challenge to creating a vaccine. HIV is a highly lethal virus that continues to evolve in the body, making it difficult for the infected person to clear the infection. Without effective therapeutic intervention, there are few survivors after contracting HIV. "If you get mumps and recover from it, you develop a lifetime immunity," explains Pharmaceutics Professor **Shiu-Lok Hu**. "This has been the paradigm for classical vaccine development: to mimic natural infection without causing the disease. But, to make a HIV vaccine, we may have to look for a new paradigm. HIV leaves few survivors. Unfortunately, HIV has evolved many mechanisms to evade the immune system and ultimately destroy it. Even today, with effective treatments, if you stop taking drugs, the virus comes back."

About 30 years ago, Shiu-Lok had a breakthrough to create a prime-boost immunization to help the body fight the virus, similar to other vaccine protocols with booster shots. That breakthrough began decades of Shiu-Lok's research funded by the National Institutes of Health and more recently by the Gates Foundation.

So far, the only vaccine that has shown a modest (~30%) efficacy is the one tested on >16,000 volunteers in Thailand (the Thai trial), that uses the "prime-boost" strategy. Although the Thai trial has shown the feasibility of vaccination against HIV, further improvements are needed to make it an effective preventive measure.

Shiu-Lok has joined forces with Associate Professor of Medicinal Chemistry **Kelly Lee** to continue the research to find a reliable vaccine and booster. They are using a genetically engineered

"I began this work 30 years ago and have seen the diagnosis of AIDS change from a certain death sentence to a manageable chronic condition. My dream is to see it disappear."

SHIU-LOK HU, MILO GIBALDI ENDOWED PROFESSOR OF PHARMACEUTICS

smallpox vaccine to prime the immune system, followed by recombinant HIV proteins as a boost. In this new grant, Shiu-Lok and Kelly hope to improve the efficacy of the "prime-boost" approach by designing a more effective vaccine. Kelly has studied the influenza virus, which utilizes mechanisms similar to those used by HIV to "dock" onto the host cell, pry it open, transfer the viral genes into the cell, thereby taking it over and causing the infection.

The team seeks to create a vaccine that could better expose the part of HIV it uses to dock onto the cell, thus making it easier for the body to mount immune responses to block infection. If successful, these approaches are likely to result in greater efficacy than that achieved in the Thai trial.

This project highlights the unique capacity of the UW School of Pharmacy in pharmaceutical sciences, as Shiu-Lok and Kelly each bring different expertise in virology, immunology, and structural biochemistry to tackle problems such as HIV vaccine. Their partnership could well lead to a breakthrough to find a safe and efficacious vaccine to help make the world free of AIDS.

The five-year, \$4.5M grant was funded by the National Institute of Allergy and Infectious Diseases, National Institutes of Health (R01AI129673).

MAKING IT EASIER for PEOPLE LIVING WITH HIV

When it first emerged, AIDS was devastating and deadly. The HIV virus that causes the disease is virulent and quickly becomes resistant to single drug treatment, making it hard to manage.

Over the years, a cocktail of multiple drugs has kept the virus suppressed. These drug combinations taken by mouth daily have been lifesaving for many, changing HIV from an acute illness to a chronic condition allowing people to live into old age.

The problem with these oral drug combinations is that they require a stable schedule for daily intake, access to refrigeration, and the resources to obtain prescription refills. For people in prison, experiencing homelessness, or living with other illnesses, proper storage, access to medication, and adherence is daunting. Furthermore, for those who can manage to take oral daily pills for life, any interruptions in medication could cause the virus to rebound and progress to full-blown AIDS.

These scenarios inspired an interdisciplinary team at the UW to develop a long-lasting therapy for HIV. The UW's Targeted and Long-Acting Combination Antiretroviral Therapeutic (TLC-ART) program has assembled a team to address these challenges in pursuit of curing AIDS. The team includes **Danny Shen, Shiu Lok Hu, Lisa McConnachie, Josefin Koehn, Jesse Yu, Florian Hladik, Carol Collins**, and **Loren Kinman**. It is led by two Principal Investigators: Professors **Rodney JY Ho** of the UW School of Pharmacy and **Ann Collier** of UW Medicine.

The team has successfully created a new injectable dosage that combines three HIV drugs, targeted to HIV host cells

in blood and in the lymph nodes. The product candidate lasted over two to four weeks in a macaque model.

Now in its fourth year, the TLC-ART team has made outstanding progress with the help of a large NIH grant. It has progressed from the concept defining drug-insufficiency hypothesis in HIV patients (relating to inability to cure them with current one pill a day strategies) to developing a new platform technology designed to overcome drug insufficiency in lymphoid tissues (where residual viruses persist even with chronic oral once a day HIV drug combination therapy).

The 30+ person team has advanced to a first-in-human testing plan of a new drug called TLC-ART candidate 101 (a long-acting three-drug combination) set to begin in early 2020. The team is seeking public-private partnerships to support the bench-to-bedside transition of TLC-ART 101. With this novel strategy, they were able to reach the human testing stage in 4-5 years as opposed to the typical 10-15.

In honor of his lifelong commitment to research excellence and path-breaking leadership of the TLC-ART program, the American Association of Colleges of Pharmacy (AACP) presented Rodney Ho with the prestigious Volwiler Research Achievement Award in July 2019. We congratulate Rodney on the award and his continued success improving population health.

The TLC-ART program is supported by the NIH Grants UM1 AI120176, U01 AI48055.



Shirley Bridge, '45

AIDS & WOMEN'S RIGHTS ADVOCATE

While on the Board at Harborview Shirley saw the devastating impact AIDS had on patients and their families. As the HIV/AIDS epidemic spread, filling many with fear, "Shirley went around to neighborhoods knocking on doors to explain about AIDS and to reassure people," wrote Herb in his autobiography, *Building Bridges*. In 1992, thanks in part to her advocacy, the Bailey-Boushay House opened, & became a nationally recognized hospice primarily for people with AIDS. Later, the Shirley Bridge Bungalows were named in her honor and offered affordable housing to families affected by HIV/AIDS.

WE ARE PHARMILY

UWSOP has a long tradition as a close-knit family who guide, train, and support each other. We celebrate just a few of our pharmily – they reflect all of us today, yesterday, and tomorrow.

Gertrude and Louis Rubenstein

Louis was a Seattle pharmacist who passed away in 1924. He and his wife **Gertrude** had a profound impact on pharmacy education in Washington through their gift to UWSOP. Their Endowed Memorial Scholarship supports an average of 50 to 75 pharmacy and graduate students annually. They also helped create the Hall Health Center Rubenstein Memorial Pharmacy, which has served the UW community since its dedication in 1978, providing affordable care right on campus.

Jack and Maxine Orr

High school sweethearts **Maxine** and **Jack** arrived at UWSOP in 1956. Jack served as Dean for 22 years and Maxine served for 26 years as what was then called a faculty wife. He doubled the number of faculty and staff, shifted the curriculum to a clinical approach focused on patient care, and laid the basis for the PharmD Program. He wrote *The First Century, A History of The University of Washington School of Pharmacy, 1894-1994*. A number of talented faculty leaders joined UWSOP during his tenure: **Lynn Brady, Wendel Nelson, Joy Plein, Frank Vincenzi, Dale Christensen, John Horn, Wayne Kradjan, Bill Trager, René Levy, Bill Campbell, and Sid Nelson**. Three of these faculty went on to become deans (Wayne at Oregon State, Bill Campbell at UNC, and Sid at the UW). Maxine passed away in 2010 and Jack in 2018 at age 99, leaving a legacy that transformed pharmacy education and research nationwide.

Geri and Lynn, '59, Brady

Pharmacognosy, the study of medicinal drugs derived from plants and other natural sources, brought **Lynn** and **Geri** to UWSOP in 1959 when Dean Orr hired him to teach. Lynn later served as Associate Dean. In memory of Lynn, Geri created three funds celebrating his love for science and care for our students: The Natural Products Faculty Fund; The Lynn R. and Geraldine W. Brady Endowed Scholarship Fund, which provides financial assistance for high achieving pharmacy students; and the Lynn R. and Geraldine W. Brady Endowed Professorship, held by Associate Dean **Peggy Odegard**.

“In some sense, we are a family in pharmacy, as we hold one another accountable for our high ethical standards and relay on one another for support as we plan for the future.”

SID NELSON, FORMER DEAN, UW SCHOOL OF PHARMACY

Bill, '65, and Caryl Trager

Bill received his Ph.D. in medicinal chemistry at UW, under the supervision of Professor **Alain Huitric**. He was an assistant professor at UCSF where his interest in drug metabolism, which became his life's research, began. Dean Orr recruited Bill back to be a professor of Med Chem, and later Chair from 1980-1983. Bill was an outstanding mentor to more than 20 graduate students and 12 postdoctoral fellows. He was internationally renowned for his work on warfarin metabolism and mechanisms of warfarin drug interactions. He received the PAA Distinguished Alumni Award in 2001 and stayed active with the School. He and his wife, Caryl, created a fund that supports Med Chem graduate students. His former students & friends created the Drug Metabolism Endowed Grad Fellowship in his honor.

Elmer and Joy, '51, '56, Plein

Joy and **Elmer** have devoted their lives to the field of pharmacy. Individually, both are trailblazers in the field. Elmer joined the UWSOP faculty in 1938 and was responsible for a number of major initiatives, including founding the UW's clinical pharmacy program in 1968, one of only two such programs on the west coast. Joy is widely credited for creating the momentum for senior-care pharmacy in Washington state, at a time when few pharmacists were geriatricians and there were even fewer resources to advocate for older patients. In 1973, she and Elmer developed a nursing home pharmacy course, leading to the establishment of the Certificate Program in Geriatric Pharmacy, now named for the Pleins, and in 2016 founded the Plein Center for Geriatric Pharmacy Research, Education and Outreach.



FROM LEFT TO RIGHT: TOM BAILLIE, BILL FASSETT, '69, JACK ORR, SEAN D. SULLIVAN, BILL CAMPBELL, JOY PLEIN, AND WAYNE KRADJAN

Milo and Florence Gibaldi

Milo, dean from 1978 to 1995, was well known for his work in biopharmaceutics and pharmacokinetics. He was instrumental in inspiring interdepartmental research efforts and in 1980 the School surpassed \$1 million in research support for the first time. He placed the need for more space on the front burner, and began the long process of moving the school to the Health Sciences Building. He divided the Department of Pharmaceutical Sciences into Med Chem and Pharmaceutics, and implemented the 2-year, post-baccalaureate Doctor of Pharmacy (PharmD) program in 1980. Family was vital to Milo and his wife **Florence**, well-known as an excellent baker, and they instituted Gibaldi Day, bringing together the Pharmaceutics' faculty and staff families—a tradition that lives on today.

Sid, '68, and Joan Nelson

Sid graduated from UWSOP in 1968 with a BSPharm. He went on to earn a PhD degree in medicinal chemistry from the University of California, San Francisco, joined the UWSOP faculty in 1977, and became dean from 1994 to 2008. Under his leadership, the School converted to a PharmD program and added a nontraditional approach that enabled existing pharmacists to obtain the PharmD degree. He evolved the graduate programs and worked tirelessly to expand the School's faculty. In 2008, he returned full time to his research and teaching activities in Med Chem. Sid and **Joan** were enthusiastic supporters of the people

around them — cheering loudly in the audience at academic and industry events when our pharmacy students received awards, proudly supporting his Ph.D. students at scientific conferences around the world, and so much more.

Tom and Kathleen, '93, '97, Baillie

Tom began his career at UWSOP as a faculty member in Medicinal Chemistry from 1981 to 1994, when he left the UW to go to Merck Research Laboratories because of the opportunities to pursue his research in drug metabolism and pharmacokinetics. **Kathleen** is an alumna of UWSOP having earned her PhD in Med Chem. He returned to UWSOP as dean in 2008, just as the global recession hit. Despite that economic challenge, the School expanded student services, renovated the **L.D. & Jim Bracken** Pharmacy Learning Center, increased enrollments, faculty and staff hires— all while maintaining the School's national rank in the Top 10 and leading the School through a critical re-accreditation with flying colors. Tom and Kathleen have established an endowed student support fund for graduate and professional students.

Want to know more about how you can make an impact on the future of health care? We invite you to reach out to our Advancement Team to discuss what matters to you and how your support can make that happen. Contact Claire Forster at clbrown@uw.edu.

From Denny's Knoll to the Health Sciences Building of the Future

The first class of UW pharmacy students met in downtown Seattle on Denny's Knoll in 1894. The 2nd year began at Denny Hall on the 350-acre UW campus. In 1905 we moved to the 'Chem Shack' (Architecture Hall) and in 1937 to the new Bagley Hall. Moving to the Health Sciences Building began in 1978. After 40 years in Magnuson, we are on the verge of a state of the art building that will bring the Health Science disciplines together to train and learn.



CELEBRATING OVER 40 YEARS of our **ALUMNI ASSOCIATION**

In 1976, Dean Orr assembled a team of alumni to develop an association to bring networking, learning, and collaboration opportunities to our School's alumni. The Pharmacy Alumni Association remains one of the only dedicated alumni groups at the UW.

One of the reasons why the UW School of Pharmacy is so mighty, even though—relatively speaking—it is tiny compared to other colleges at UW, is because of the strength and commitment of our Pharmacy Alumni Association.

The first gathering of School alumni took place in 1920 when 60 of the 228 alumni gathered for dinner at the Faculty Men's Club on campus (now the UW Club). The first president was a member of the original graduating class and former faculty member, **Thomas Lough**, class of 1896. Alumna **Robin Wilkes**, class of 1920—who later married **Forest Goodrich** (Dean 1939-1956)—was the first secretary-treasurer. After that initial meeting, a few dinners and other events were held, but then faded...until **Jack Orr** became Dean.

In 1969, with the 75th anniversary looming, Dean Orr put out a call in the new alumni newsletter—founded by **Jim Cammack**, '67—to form a Pharmacy Alumni Association. There were a few annual gatherings, but it wasn't until 1976, when Dean Orr appointed a steering committee, that the PAA as we know it today began in earnest. The committee included SOP legends **Donald B. Katterman**, '48, **Theodore (Ted) Taniguchi**, '49, **William E. Fasset**, '69, **Karen (Hansen) Nelson**, '67, **Richard Karpen**, '67, and **Paul Kuehn**, '69. Don was elected President and Ted served as the secretary-treasurer. The first issue of the Pharmacy Alumni News was published in 1977 with a note from Dean Orr making a call for support for projects at the school that had no other means of support. Dean **Milo Gibaldi** continued the high level of support for the Alumni Association, which

“As a pharmacy student, I received a \$100 scholarship, which was a quarter's tuition. That gift changed my life—I met my wife Carrol at the UW and entered a career I loved. I am honored to pay that forward.”

GARY HARRIS, '72, FORMER PAA PRESIDENT

continued to grow in its impact, raising over \$50K in 1993—making it possible for students to attend conferences and grow their professional experiences.

PAA President **Scott Herzog** is keeping the legacy of support alive and well with the launch of the PAA 125th Endowed Scholarship match to provide a dollar-for-dollar match to every gift made in support of a new PAA Endowed Student Support Fund (for more information, email rxalumni@uw.edu).

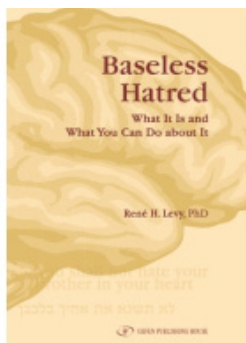
PAA continues to grow and thrive—with more networking events, the annual Donald B. Katterman lecture, the Distinguished Alumni Award, mentorship and reunion programs, and everyone's favorite magazine—*Dawg Scripts*. And, for the past fifteen years, the members of the Pharmacy Alumni Association are a big reason why the tiny but mighty UW School of Pharmacy is number one at the UW in alumni giving back to their school. From those early days to now, to all our members, we say thank you!



“I am grateful for PAA's generosity toward the education and career enhancement of students like myself. Your support will help me apply for residency programs and out-of-state interviews.”

—Jennifer Chou, '19

Known for their inventive spirit, our alumni and faculty are rarely content with staying in one lane. We look at a handful of standouts who have projects beyond pharmacy and the lab.



René Levy Author

BASELESS HATRED

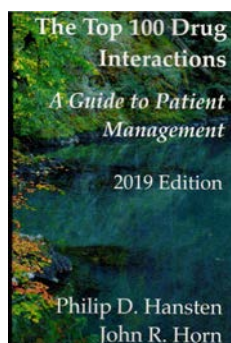
Professor Emeritus René wrote *Baseless Hatred: What It Is and What You Can Do About It*. The book looks through a scientific, sociological, and religious lens at the causes and effects of baseless hatred, and offers a prescription for preventing and repairing its damaging consequences.



Sean D. Sullivan The Bands

MONTE CARLOS & OAK BARREL DISCIPLES

Outside mentoring over 100 students and becoming Dean, Sean D. Sullivan plays the drums in two bands. The Monte Carlos, featuring Mitch Higashi, '01, Julia Slejko, Heather Evans and a 4-piece band with with Don Downing, '75. We hear they refer to themselves as the "Oak Barrel Disciples."



John Horn & Phil Hansten Co-Authors

THE TOP 100 DRUG INTERACTIONS

Philip D. Hansten and John R. Horn have collaborated for many years in creating *The Top 100 Drug Interactions: A Guide to Patient Management*. The text is a staple for health providers worldwide. Every year, Philip and John generously donate copies to our pharmacy students.



Oliver Parkinson, '12 Trapeze Artist

FROM THE MED CHEM LAB TO THE BIG TOP

After graduating with his PhD in Med Chem, Oliver followed his heart and big tent dreams to become a trapeze artist full time. Oliver works as part of a duo and has been in Moisture Festival, and other shows. A highlight was his appearance on the television show *America's Got Talent* in 2015.



Casey McClellan, '83 Vintner

PHARMACIST & VINTNER, SEVEN HILLS WINERY

After earning his degree in pharmacy, Casey went on to earn an MS in oenology, the study of wines. In 1988, he and his wife, Vicky, founded Seven Hills Winery. While growing the winery, Casey fit in a 25-year career in hospital pharmacy.



Karan, '70, '78, '03 & Jim, '70, Dawson Transforming Trequanda

IT TAKES A VILLAGE TO MAKE A COMMUNITY

Karan & Jim went through an extensive interview process with the owners and members of the village before buying their villa in Trequanda, Italy. The village later asked them to assist with growing tourism and developing the economy beyond olive growing and agriculture.

THE FUTURE of PHARMACY

Our mission is to develop exceptional pharmacy leaders and researchers, discover solutions to improve population health, and serve the health and well-being of the public, locally and globally...even in space.

At the University of Washington School of Pharmacy, we embrace diverse perspectives, beliefs and cultures and work to serve the greater good of society.

When pharmacists are open and educated on how to support their patients, the quality of care improves. Through our training, research, and outreach, we make sure we are taking care of people--whatever their needs are. Our work matters and we make a difference.

In 2009, then student, now alumna, **Joanna Preker**, '12, worked with I2P2 Endowed Clinical Professor **Don Downing**, '75, to advocate for improved patient access to sexual and reproductive health services. Founded and named by Joanna, Pharmacy for Reproductive Education and Sexual Health (PhRESH) was a first-of-its-kind pharmacy student organization. Her novel efforts were successful, resulting in increased access to health care for women and families in Washington and elsewhere.

Sam Miller, PharmD candidate, class of 2020, an active PhRESH member, is leading the way in supporting transgender patients. He has created a toolkit and resources to train pharmacists in how to communicate they are a welcoming pharmacy—from asking for preferred pronouns to wearing pronoun buttons on lab coats. Sam's programs include the technical aspects of supporting transgender patients including training them on injecting hormones, helping with insurance coverage questions, and more. Sam won an award at the WSPA Northwest Pharmacy Conference for his research poster on training pharmacists to support transgender patients and recently did a rotation at the Human Rights Campaign.

We are boundless in our efforts to improve health care. In 2019, faculty members **Ed Kelly**, **Cathy Yeung**, '05, '13, and their team, along with collaborators at UW Medicine and Kidney Research Institute, watched live at Kennedy Space Center in Cape Canaveral as the Kidney on a Chip project launched to outer space. The project aims to help people on Earth and future astronauts on missions to Mars. One of the challenges of spending years in microgravity is that there is a high increase in kidney-related health problems, including osteoporosis and kidney stones. The team hopes to gain insight into that rapid aging process through the microphysiological chips.

“We aren’t waiting for the future to happen. We are proactively accounting for what these changes mean and preparing our student pharmacists and researchers to think critically and be able to adapt to whatever policies, innovations, or technologies are to come.”

SEAN D. SULLIVAN, PROFESSOR AND DEAN, UW SCHOOL OF PHARMACY



Thanks to donors like **Richard**, '54, and **Susan Coar**, we continue to support forward-looking research projects like those supported by UWSOP Faculty Innovation Awards. Pharmacy's **Brian Werth** and Medicinal Chemistry's **Libin Xu** received funds to support their novel research into antibiotic resistance mechanisms in the superbug, methicillin-resistant *Staphylococcus aureus* (MRSA), which has led to a \$1.86M NIH grant.

An interdisciplinary team led by CHOICE Professor **Beth Devine**, with Pharmaceutics' **Isabelle Ragueneau-Majlessi**, '10, and Pharmacy's **Shelly Gray** and **Jennifer Wilson Norton**, '93, earned the Faculty Innovation Award funds for their research on using pharmacogenetic testing on clinical outcomes in retirement communities. UWSOP's **Jennifer Bacci**, and **Basia Belza**, from the UW School of Nursing, are serving as advisors. **Abhi Nath** is looking for new ways to predict how the body metabolizes biologics, also known as "large-molecule" drugs or protein-based therapeutics. These drugs display immense potential in the treatment of many challenging forms of cancer,

autoimmune disorders, and infectious and degenerative diseases, but little is known about the factors that govern their pharmacokinetics and disposition. Professor **Allan Rettie**'s team seeking new personalized ways to slow the progression of the development of breast cancer by focusing in on an enzyme, CYP4Z1, that can go rogue, which may lead improved therapies that are custom for a patient's particular type of breast cancer.

These interdisciplinary approaches to training are indicative of the multi-disciplinary approach to solving problems of population health. We are proud of the tradition of alumni who are both pharmacists and researchers, including **Dave Veenstra**, **Beth Devine**, **Jean Dinh**, '05, '09, '14, **Ryan Hansen**, '03, '12, **Jonathan Watanabe**, '98, '08, '12, **Cara McDermott**, '11, '12, '16, **Cathy Yeung**, **Cate Lockhart**, '04, '13, '16, '16, **Todd Lee**, '01, **Kai Yeung**, '15, and **Lindsay Henderson**. The problems of health and the health care system are intertwined and complex. It will take leaders like our alumni to create a world where all people can live healthier and more fulfilling lives.

Dawg Scripts

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-Gordon Sproul, '19
(pictured)

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125
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