INSIDE: An in-depth look at our Global Surgery Program [Page 4] and a special message from Mackenzie Society President Dr. Kim Swartz [Page 20]

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SPRING FEVER IS UPON US! After a very dreary, wet, long winter a few weeks of sunshine and warm weather has drawn everybody in Portland out into the fresh air. While it would be appealing to believe that this fine weather will continue, we know better. Reliably nice weather is still two to three months away, based on past experience.

There is no earthshaking news from the Department of Surgery or OHSU at this moment, but there are quite a number of things that keep us busy day and night. First, we are still struggling with capacity constraints in the hospital. All of our partnership and outreach efforts have done nothing more than increase the demand for tertiary and quaternary care at OHSU. As we struggle with this issue, we look west to our partners at Tuality Healthcare with hope that we can make and enjoy a great partnership. We continue to define a new patient-centered system of care with our partners Salem Health and Tuality Healthcare, as well as expanding our network of physicians in The Dalles and Astoria. As these affiliations mature, we are excited about the benefits for our patients in developing a system that is efficient, patient-friendly and convenient.

While much of our annual recruiting takes place in the fall and winter, we are pleased to announce the addition of four new members of our faculty, starting during the summer months. These include Jai Raman, M.D., Ph.D., F.R.A.C.S., Professor of Surgery from Loyola in Chicago, who will be joining the Cardiac team. Jai has a broad range of experience from heart failure, to devices, to valvular disease and will bring experience and innovation to our group. James Lim, M.D., is finishing an endocrine fellowship at Columbia. James has already attracted the attention of the international endocrine community for his work in multiple endocrine neoplasia (MEN). Albert Chi, M.D., M.S.E., F.A.C.S., is a Trauma and Critical Care surgeon at Johns Hopkins University. Albert has a great interest in neurally-controlled artificial limbs. This exciting new area of research allows the mere thinking of motor actions to be translated into prosthetic arm function. Jens Berli, M.D., will be joining us from Johns Hopkins as well. Jens is completing his plastic surgery residency there and will spearhead our program in gender-reassignment surgery. All four of these individuals bring fresh ideas, and a passion for research, as well as fine surgical skills.

In this newsletter, we launch a new section of On the Cutting Edge featuring research and innovation. Edited by Vice-Chair for Research Bruce Wolfe, M.D., F.A.C.S., F.A.S.M.B.S., and Research Resident Director Belinda McCully, Ph.D., this section will include notices of grant funding in the department, a review of OHSU research programs, and recent presentations and research awards. As our research mission grows and becomes more successful we are proud to be able to provide a summary of our discovery efforts in each issue of On the Cutting Edge.
It is very exciting to see the launch of our new ECMO program that is truly a testament about what OHSU can do when a leader such as David Zonies, M.D., M.P.H., F.A.C.S., F.C.C.M., teams up with ICU Director Matthias Merkel, M.D., Ph.D., and with OHSU nursing, pediatric ECMO, and a host of other services to bring forth a new adult ECMO program. Using LEAN principles, this program delivers efficient, high quality, compassionate care for those with acute respiratory failure. The first ECMO patient, an individual with H1N1 flu virus, was recently treated by the team. After an 11-day run, the patient was successfully weaned as his lung function recovered. This is remarkable. We are very proud of Dr. Zonies and the entire team for making this happen.

There is also a new resident to fellow transition schedule starting this July to smooth the previously disruptive transition in care that occurred in late June and early July. Historically, the general surgery residency finished at the end of June, and the fellowships started on the first of July, giving no time for relocation and reorientation. For years, this resulted in an early exit in June by the Chief Residents, as they moved to a new location for their fellowship. To solve this problem, the surgical specialties have, by and large, resorted to a schedule that staggers the fellowship start and stop dates.

For the Chief Residents graduating this year, the American Board of Surgery Qualifying Exam will be given in the middle of July and most fellowships will not start until August 1. Some fellows that started July 1, 2015 will remain in place this year for an extra month, until July 31, 2016, to help provide a seamless overlap of seasoned manpower while the new residents familiarize themselves with their new services. We feel very positive about this change.

I’d like to close by reminding residents and faculty of our graduation exercises in the Department of Surgery on Saturday, June 4. Most of the awards will be kept as a surprise, but our OHSU Alum of the Year must be revealed as she will be giving Grand Rounds on Monday, June 6. Mary Hawn, M.D., M.P.H., F.A.C.S., graduated from the residency program at the University of Michigan and came to OHSU for a minimally invasive surgery fellowship. I was pleased to participate in her training for two months in 2001, but she really trained under Brett Sheppard, M.D., and Cliff Deveney, M.D., after leaving OHSU, Mary went to the University of Alabama in Birmingham where she rose to national prominence in laparoscopic surgery and outcomes research. A year ago, Dr. Hawn became the Chair of Surgery at Stanford University (a small private school south of here :)). It will be a great honor to have Mary with us for our graduation festivities.

Well that’s about it from here. While it seems a long way to the fall, please mark your calendars for the OHSU Department of Surgery Golf Tournament on September 9 at Royal Oaks. One week later, our annual dinner and auction will be held on September 16 at the Hilton Hotel in downtown Portland. If you can make either of these events please contact Michelle Kleyne (kleyne@ohsu.edu) or Pat Southard (southarp@ohsu.edu) in the Department of Surgery. Enjoy the warm, sunny weather and I’ll check back in with you at the beginning of our next academic year.

Cheers!

John
Karen Kwong, M.D., leads the Global Health Advocacy Program in Surgery (GHAPS)

My thirteenth trip to Haiti will have just concluded by the time you are reading this newsletter, scheduled for the end of April 2016. Every trip is different; this year, team members and I have been sending a flurry of emails regarding the Zika virus and what that may mean to those traveling to Haiti. Whether it’s the Zika virus, a hurricane or an earthquake, the obstacles of practicing global medicine are small compared to the need.

Back when I was in medical school and starting my clerkships, I thought about family medicine and perhaps geographic medicine (as infectious disease medicine was called back then) as an ideal way to meld my passion for working with the underserved with travel. A rotation I pursued with the Indian Health Service illustrated a real need even here in the U.S. When I realized from my surgery clerkship that this was the field I loved, it didn’t occur to me then that I would be involved with anything globally. Global surgery at that time was in the realm of retired or missionary surgeons who worked in relative obscurity in terms of the academic and private world of the U.S. I had the privilege to obtain jobs in some very underserved communities at county hospitals, the largest of which was located within a U.S./Mexican border city, and then later in inner city Houston, which fit my passion perfectly. It wasn’t until we were living in Portland that my husband Marty (Martin Schreiber, M.D.) and I were invited to join a surgical group rotating in the mountains of Guatemala and I got my first taste of actual international surgery. It turned out that my previous experience working in underserved settings did pair well with practicing overseas; the “MacGyver” problem-solving skills I’d developed resurfaced quickly and allowed me to work with whatever equipment was available rather than demanding a special instrument! Back then, Marty and I thought it was crazy that our med school classmate Nick Gideonse, M.D., went to Haiti for medical missions. So I never would have predicted that I would be going there after the 2010 earthquake for disaster relief, nor later being a part of developing a regional medical group and bringing residents regularly to Haiti at their request. I certainly didn’t think, with the help of many friends here, that I would be trying to build a school with internet access in a remote fishing village for kids who couldn’t afford public school, nor attempt to build an educational radio station there to warn people about hurricanes and to teach that diseases were not the result of a Vodou curse. While I couldn’t build a university there, we could, with my NGO and umbrella non-profit, help sponsor higher education in Haiti for some of our volunteers there to become engineers and doctors for Haiti’s infrastructure.
At the other end of the spectrum in Global Surgical Education, I am an Adjunct Professor for Queen Mary University of London/Barts and The London School of Medicine where I serve as an advisor and evaluator for their Masters in Trauma program. My current students are surgeons from Singapore, England, and Australia. Learning about their different medical systems through their assignments has also broadened my own horizons and ideas about global surgical care.

As surgeons, we are in the unique position to make a lasting impact on people's lives. With the internet making the world more accessible, it's no surprise that the majority of our resident applicants, as well as current residents and surgeons, are interested in Global Surgery. This interest is reinforced by *The Lancet Commissions Global Surgery 2030 report*, which notes that 5 billion people lack access to basic surgical care (*Lancet* 2015;386:569–624). In developing countries, 143 million operations are required each year to prevent death and disability. In addition, the surgical workforce needs to double by 2030 to reach 80 percent coverage of worldwide surgical needs. Although costly, the gains in the disability-adjusted life year provide far more economic gains than the related costs and are also justified on the humanistic level.

**We're training our surgeons to work in areas of physician shortages, whether that’s the rural U.S. or around the world**

Beginning with the development of the rural surgery program in 2003, the OHSU Department of Surgery has supported the training of surgeons to work in areas of physician shortages. This program, developed by Drs. Karen Deveney and John Hunter, provides rotation opportunities in rural communities to surgery residents where they are exposed to a broader base of surgery and work directly with specialists. Residents trained in a rural surgery setting receive more hands-on training and encounter a greater variety of conditions and procedures, which perhaps best prepares these residents for the scope of the surgical needs that they encounter during any subsequent overseas experience. The OHSU rural rotations include a year in Grants Pass at the senior resident level or six months in Coos Bay at the third- or fourth-year level.

We are very fortunate to have department leadership from our Surgery Chair John Hunter (who himself worked as a student in Thai border camps) and General Surgery Residency Program Director Karen Brasel, M.D., M.P.H., F.A.C.S., who are committed to the OHSU Global Surgery interests. In addition, we have very involved residents such as MacKenzie Cook, M.D., Estin Yang, M.D., Alexis Moren, M.D., Chris Connelly, M.D., Nikki Weighard, M.D., Sara Walcott-Sapp, M.D., and graduates such as Katrine Lofberg, M.D., and Megan Frost, M.D., who helped spearhead and provide leadership for our Global Health Advocacy Program in Surgery (GHAPS), and blazed the way for international options.

Our current residency pathway involves mastering the basic surgical skills in the R1-3 years. Strong surgical skills and training are the backbone of international practice. The PGY1-3 years provide exposure to specialty areas and allow for the development of skills in the fields encountered overseas.

During the fourth year of residency, an opportunity to participate in a research year is available in which research residents take part in our annual Fall surgery elective for MS1’s and MS2’s, called *Surgery and Inequalities*. This course, the brainchild of current chief resident Dr. Mac Cook, has finished its fourth year running, introducing medical students to the critical role that surgery can play in reducing health inequalities. The course includes an introduction to OHSU surgeons who have participated in a variety of overseas experiences: Jim Peck, M.D., talks about his experiences and lessons learned with MSF (Doctors without Borders); often we have 43-year career UN Official Michael Heyn, M.S., speak on the development of global surgery; Robert Goldman, M.D., discusses surgical inequalities in the U.S.; Kayvan Roayaie, M.D., Ph.D., has talked about his resident grassroots efforts in twinning at UCSF; and Richard Yeager, M.D., about working with PAACS in Cameroon. We will certainly recruit Bruce Ham, M.D., who is experienced in setting up rural surgery coverage and has done volunteer work in Ethiopia. Two of our VA Portland Healthcare System anesthesiologists, John Rompala, M.D., and Dave Wilson, M.D., have spoken about anesthesia and the WHO safe surgery principles in Haiti. I personally speak each year about disaster relief and Haiti and as faculty of this course, I learn something myself each time.

For more information about GHAPS, contact Dr. Karen Kwong at kwongk@ohsu.edu or visit www.ohsu.edu/global-surgery
Resident travel to Tanzania, South Africa and Haiti with OHSU’s GHAPS

Currently the research year is the only period during which residents can participate in the month-long Tanzanian University program (affiliated with the Pacific Coast Surgical Association) where they and a faculty member work alongside Tanzanian University residents. Tanzanian residents were ecstatic with the knot-tying skills lab run by resident Jeff Crawford, M.D., this last year, where they learned how to tie one-handed knots for deep areas, having previously relied mainly on instrument ties for sparing suture. In addition to skills labs, both Jeff Crawford and Mac Cook noted increased autonomy (with the supervision and back-up of board-certified surgeons such as Dr. Peck and other PCSA faculty) during the night calls, adding great value to their experience. This model of “twinning” between universities is one of the best ways to address developing countries’ surgeon and infrastructure shortages, allowing for the sharing of collective knowledge and resources to design appropriate solutions to problems in the host country. PCSA is in the process of developing a scholarship fund to help offset some of the expensive travel costs for the residents.

Also during the research year, residents have the opportunity to study and research abroad at the University of Cape Town in South Africa while simultaneously pursuing a Masters in Public Health. Most recently, Megan Frost, M.D., Katrine Lofberg, M.D., and Estin Yang, M.D., successfully completed the program. Following completion, Dr. Frost noted that principles learned at Cape Town aided her significantly in her now-permanent rural surgery practice in Grants Pass, Ore. Dr. Yang will be joining her in Grants Pass as a colleague later this year following graduation.

A shorter but no less intense global surgery option within the program is our biannual eight-day trip to Haiti, called Lane Haitian Relief (LHR). Offered twice a year for residents at or above the research year, the experience is a grassroots effort developed by Oregon doctors and nurses in Eugene and Portland. Participating residents learn about the “DIY” aspects of global surgery in terms of logistics and how to manage a team. They act as pharmacists in preparation of medications, learn how to prepare for and manage mobile clinics, how to operate and round in an austere environment, and learn about the cultural barriers and joys of practicing where there is great need. We also work side-by-side with medical and nursing students in Haiti, who value the learning experience just as much as the money they earn to help pay their tuitions. Through this connection, we have also been able to arrange a summer-exchange rotation for two Haitian medical students at OHSU, thereby making this program a bi-directional interchange. As with the Tanzanian experience, our residents are paired with Board-certified surgeons for the length of the trip. Thus far, eight surgery residents/fellows, and five OHSU surgeons have traveled to Haiti with LHR, including Drs. Marty Schreiber, Donn Spight, Kevin Billingsley, and Josh Schindler, not to mention a host of Eugene and Portland community surgeons. Our team leader and founder is surgeon Snell Fontus, M.D., of Eugene.

“The model of “twinning” between universities is one of the best ways to address developing countries’ surgeon and infrastructure shortages, allowing for the sharing of collective knowledge and resources to design appropriate solutions to problems in the host country.”

May 2015. Dr. Kwong throws some (peace) signs with five Haitian medical students, two of which came in exchange to OHSU later that year with the other three sponsored at Haiti’s engineering and medical school.
Where we’re going next

Looking to the future, our OHSU Global Surgery Program interests include potential “twinning,” or pairing and collaboration between universities, within the countries of Thailand and Laos. A Thailand university hospital is potentially looking for partners to help with further development of their trauma and research programs, and surgical opportunities may exist at public and more rural locations within Thailand and Laos.

As we continue to forge relationships outside of the U.S., there remain challenges to address. Due to ACGME Residency Review Committee rules, barriers still exist in making month-long international rotations available to chief residents. On a logistical level, the resident salary structure inevitably discourages resident participation. On the side of faculty participation, finding satisfactory ways to ease OHSU faculty away from operating and clinic responsibilities for 4-5 weeks in order to travel overseas is always a work in progress. However, as PCSA further develops its scheduling structure, scheduling interested residents and faculty may become easier to plan ahead for and incorporate. We also need to continue to work on contributing to the available scholarly literature with our international activities. For this, we’ve had a nice start, with several of our residents presenting abstracts of their experiences thus far.

Global surgery fulfills many needs. Clearly there is a need for basic surgical care in developing countries. Experiences overseas have also led to projects which have helped our own communities. For instance, our volunteer dentist for LHR realized that there were unmet dental needs right in his hometown of Eugene after his experience in Haiti; he ended up working with local businesses to support annual free dental care in his community. The experiences satisfy our own curiosity, wanderlust, and altruistic tendencies and can also help re-energize, thereby helping to prevent physician burn-out. OHSU is unique as a community with surgeons and residents who actively participate in or support global surgery outreach endeavors. Those at OHSU who have a passion to make a difference, whether it’s bringing expertise to rural surgery communities or meeting international needs, can find the training and opportunities required to go out into the world and help those who need it most.

- Karen Kwong, M.D., Global Surgery Program Director

For more information about GHAPS, contact Dr. Karen Kwong at kwongk@ohsu.edu or visit www.ohsu.edu/global-surgery
Research Resident Sheena Harris, M.D. recounts her recent travel with Lane Haitian Relief

CENTRE MEDICAL EMMANUEL is located in the small town of Cayes-Jacmel, about 20 miles south of Port-au-Prince on the southern coast of Haiti. It was the only functioning hospital for miles after the 2010 earthquake. Hundreds of patients flooded a hospital built to treat a few dozen at a time. Karen Kwong, M.D., first traveled to the hospital shortly after the earthquake. She has returned twice a year ever since.

The medical compound consists of a clinic, a few concrete structures that serve as inpatient wards, housing for the staff and visiting groups, an open-air church, and a small stone building which houses the operating rooms. All supplies are donated. The sterilization process sometimes takes all day, and dropped instruments are a legitimate tragedy.

Each morning after breakfast, the medical team packed supplies and medications and traveled to a remote clinic location as the surgery team stayed behind to operate. The week’s case mix included mostly adult and pediatric inguinal hernia repairs and hysterectomies for benign indications. Other procedures included an open cholecystectomy for unexpected gallbladder cancer and an arduous hysterectomy for cervical cancer performed by Kevin Billingsley, M.D., and Dr. Phillip, our Haitian colleague.

We stretched our supplies and staff by operating on 30 people that week. I could not comprehend how it must have been after the earthquake. Dr. Kwong told stories about how patients spilled out of the buildings and over the grassy walkways between the buildings, waiting for operations and treatment that often could not be provided in time.

One of the operating rooms within Haiti’s Centre Medical Emmanuel. This hospital, built to treat a few dozen patients at a time, was flooded with hundreds of patients after the 2010 earthquake.
“Our group of seven physicians and nurses saw 1,200 patients in four days.”

Dr. Kwong requires the surgery residents to attend at least one day of clinic. Like all surgery residents, I did my best to avoid clinic to stay in the OR. She waved away my excuses and insisted.

There were four clinics, one each day, each in a different location. Every subsequent day, the clinic locations were further and further from Cayes-Jacmel. I went to the third day’s clinic. We traveled by tap tap (translation: “quick quick”), which consisted of a covered flatbed truck, over dirt roads and through a shallow river to a remote church. We set up benches and tables and laid out bins full of medications while the line of patients wound around the building. We each sat next to our own Haitian translator, and were brought patient after patient. We saw a huge array of ailments. Out of my patients, ailments I saw included hypertension, bacterial and fungal skin infections, STDs, GERD, and an overwhelming amount of infant dehydration. Our group of seven physicians and nurses saw 1,200 patients in four days.

I left Haiti in admiration of the work Dr. Kwong and her colleagues have poured into Cayes-Jacmel. Long years of hard work have resulted in a healthy, sustainable relationship. It was a privilege to be welcomed into the operating rooms of Centre Medical Emmanuel so warmly and to forge relationships with our Haitian colleagues and a group of big-hearted providers from all over the Portland area. I am grateful that we as residents have the ongoing opportunity to have this experience, and hope that my colleagues who have not yet gone have the chance to do so.

For more information about GHAPS, contact Dr. Karen Kwong at kwongk@ohsu.edu or visit www.ohsu.edu/global-surgery
Patient Story

A Community Gift

New endowed fund honors former patient and advances kidney research and preservation at OHSU

When the Reynolds family first moved to Portland over 20 years ago, they didn’t realize their new home was located in such close proximity to OHSU. They also would have no way of knowing what an important role the hospital would play in their lives.

Stephen Reynolds, former CEO of Pacific Gas Transmission, was a member of the OHSU Foundation Board of Directors during the time that OHSU became a public corporation in the mid-1990s. Stephen was able to witness first-hand OHSU’s transformation into a world-class teaching and research institution during that time. Stephen and his former wife Sharon have also been heavily involved in the phenomenal care that their son Matthew has received at OHSU over the years. Matthew, hearing-impaired since infancy, has also struggled with ongoing kidney issues for the majority of his life. Partial bilateral blockages in his ureters shut down Matthew’s kidneys at 18 months. Since then Matthew has undergone two kidney transplants – the second of which was performed at OHSU.

Although Stephen now resides in Seattle with his wife, Paula, OHSU has always remained a priority for him. The Reynolds Family Endowed Fund for the Kidney Transplant Program was established by Stephen and Paula to acknowledge and thank the kidney transplant team at OHSU and to further patient care and research in kidney transplantation. The family intends that the proceeds from this fund will ease the burden for families who experience kidney transplants. The gift will benefit the School of Medicine, Department of Surgery, as a legacy to honor Matthew’s journey at OHSU.

And what an incredible journey it has been. Matthew, now 39, is a loving husband and father. He and his wife Shannon, also hearing-impaired, have two sons ages 11 and 13. Matthew received his Masters degree, works as a counselor for the hearing-impaired, and is also an accomplished author. Although Matthew’s care has been a team effort, the Reynolds family believes that none of these accomplishments would have been possible without the amazing attention that he received at OHSU.

“That with gifts such as these, kidney preservation research and innovation is possible,” said John Hunter, M.D. “New methods of pulsatile flow during transport between donor and recipient are improving the function of the donor kidney when newly implanted. Further developments supported with research gifts such as this may decrease or eliminate the early kidney graft dysfunction often seen in newly transplanted kidneys today.”

Matthew’s path to wellness, however, has not gone without its hardships. He is currently waiting for a third kidney, and the Reynolds family must hold the same patience and perseverance that they have shown throughout Matthew’s life.

What does Matthew’s care from OHSU mean to the Reynolds family? “I’ll tell you what it means,” said Sharon. “A wife, two sons, a graduate degree, and a book. Because of the care and the proximity of OHSU, Matthew has received the gifts of community and quality of life.”

“We are grateful to have the opportunity to serve patients such as Matthew,” expressed the OHSU Abdominal Organ Transplant Team. “The Reynolds family gift will help to provide a platform for creating innovative strategies aimed at improving the lives of all patients with end-stage kidney disease.”

Matthew Reynolds has struggled with ongoing kidney issues since he was 18 months old. Now at the age of 39, and awaiting his third kidney transplant, he relishes the time on earth he’s been gifted with.
Oregon Health & Science University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. OHSU School of Medicine, Division of CME, designates this educational activity for a maximum of 1.0 AMA PRA Category 1 Credits™ per session. Physicians should only claim credit commensurate with the extent of their participation in the activity. Grand Rounds begins at 7:30 a.m., unless otherwise noted.

APRIL

April 4 | **CAMPBELL LECTURE** | “The Best Way to Predict the Future...is to Invent it!” Thomas M. Krummel, M.D., F.A.C.S., Emile Holman Professor and Chair, Department of Surgery, Stanford University School of Medicine, Stanford, Calif.

April 11 | **SAM LIU LECTURE** | “Pancreatic Cancer and Surgery - What’s New,” Richard D. Schulick, M.D., M.B.A., F.A.C.S., The Aragón/Gonzalez-Giusti Chair, Professor and Chair, Department of Surgery, University of Colorado Denver School of Medicine

April 18 | “Pathways to Cell Maps: How Cell Scale Maps of Molecular Processes Will Change the Way We Use -omic Profiles,” Emek Demir, Ph.D., Assistant Professor of Medicine, Department of Molecular and Medical Genetics, School of Medicine, OHSU

April 25 | “Resident Jeopardy,” R. James Valentine, M.D., Professor of Surgery, Director, Vascular Fellowship Program, Division of Vascular Surgery, Vanderbilt University Medical Center, Nashville, Tenn.

MAY

May 2 | “Breast Cancer Care: Evolving Options,” Nathalie G. Johnson, M.D., F.A.C.S., Clinical Professor of Surgery, OHSU, Medical Director, Legacy Health Cancer Institute, Portland, Ore.

May 9 | “Congenital Colorectal Diseases,” Nick Hamilton, M.D., Assistant Professor of Surgery, Division of Pediatric Surgery, Department of Surgery, OHSU

May 16 | “Obesity and the GI Microbiome,” Farah A. Husain, M.D., F.A.C.S., F.A.S.M.B.S., Assistant Professor of Surgery, Division of Bariatric Surgery, Department of Surgery, OHSU

May 23 | “Endocarditis,” Thomas A. Stark, M.D., 1st Year Fellow (PGY-6), ACGME-accredited Thoracic Surgery Residency Program, Department of Surgery, OHSU

May 30 | Canceled for Memorial Day

JUNE

June 6 | “The Science of Big Data and the Promise of Personalized Medicine” | Mary Hawn, M.D., M.P.H., F.A.C.S., Professor and Chair, Department of Surgery, Stanford University School of Medicine, Stanford, Calif.

June 13 | **ICU FELLOWS DEBATE** | “ED Thoracotomies in Trauma - Relics of the Past or Standard of Resuscitation?” Amanda Sammann, M.D., Esther Teo, M.D., Rebecca “Jo” Weddle, M.D. and Frank Zhao, M.D., Trauma and Critical Care Fellows, Department of Surgery, OHSU

June 20 | 7 - 8 A.M. | “Team-Based Operative Care,” co-presented by Daniel B. Jones, M.D., M.S., F.A.C.S., Professor of Surgery, Harvard Medical School, Vice Chair, Office of Technology and Innovation; and Stephanie B. Jones, M.D., Vice Chair of Education, Department of Anesthesia/Critical Care/Pain, Beth Israel Deaconess Medical Center, Boston, Mass.

June 27 | **MIS FELLOWS DEBATE** | “Gastric Bypass vs. Sleeve Gastrectomy: Is it Time for a New Gold Standard?” Laura Fischer, M.D. and Fernando Mier, M.D., MIS Fellows, Department of Surgery, OHSU
R. James Valentine, M.D.,
Professor and Program Director of the Vascular Fellowship Program at Vanderbilt University Medical Center, is a vascular surgeon with special interests in premature-onset arterial disease, graft infections, and surgical education. After receiving his medical degree from Emory University School of Medicine in Atlanta, Georgia, Dr. Valentine completed his general surgery residency and vascular surgery fellowship at UT Southwestern.

Following a four-year active duty commitment in the U.S. Navy, Dr. Valentine returned to Dallas in 1990 to join the faculty as a vascular surgeon at UT Southwestern. He rose through the ranks to become Professor of Surgery and held the Alvin Baldwin Jr. Endowed Chair. He served as Vice Chair for Surgical Education and subsequently Chair of the Division of Vascular Surgery before retiring from UT Southwestern in 2015. He then moved to Nashville where he holds his present positions at Vanderbilt University. Dr. Valentine is dedicated to clinical excellence, teaching, and research. He has authored over 170 journal articles, 25 book chapters and a classic textbook on the anatomy of vascular exposure. He has served on the editorial board of four journals, and is a co-Editor-in-Chief of Scientific American Vascular and Endovascular Surgery. Dr. Valentine is the current President of the Western Surgical Association and Past-President of the Southern Association for Vascular Surgery and the Association for Program Directors in Surgery.

Mary T. Hawn, M.D., M.P.H., F.A.C.S.,
June 6, 2016 | 7:30 a.m.

Mary Hawn, M.D., M.P.H., F.A.C.S., is a general surgeon with a special interest in quality and clinical effectiveness, and was appointed Chair of the Department of Surgery at the Stanford University School of Medicine in 2015. Prior to that, she served as Director of the Division of Gastrointestinal Surgery and Vice Chair for quality and clinical effectiveness at the University of Alabama at Birmingham, home to one of the five largest academic medical centers nationwide.

Dr. Hawn grew up in Manistique, Michigan, a town of about 3,000 on the shore of Lake Michigan. Her father was a dentist, and she became interested in medicine at an early age. As an undergraduate studying biomedical sciences at the University of Michigan, she worked in the laboratory of a gastroenterologist investigating genes that regulate stomach acid secretion. She earned a medical degree and completed a surgical internship and residency at the University of Michigan Medical School. During her residency, she completed a research fellowship in colorectal tumor genetics and a master’s degree in epidemiology. In 2001, after a fellowship in laparoscopic surgery at Oregon Health & Science University, Hawn was recruited to be an assistant professor in the gastrointestinal surgery section at UAB.

Dr. Hawn is a member of the Board of Governors of the American College of Surgeons. She serves on the editorial boards of the Journal of the American College of Surgeons, the Annals of Surgery, the Journal of Gastrointestinal Surgery and the American Journal of Surgery. She is the co-author of more than 90 articles in peer-reviewed journals and co-editor of the 2015 textbook Operative Techniques in Surgery, as well as of six book chapters in other volumes on surgical techniques and outcomes.

Her research interests focus on surgical quality and effectiveness, with the goal of helping to build valid measurements for quality care and to improve standards of care.
Daniel B. Jones, M.D., M.S., is Professor of Surgery at Harvard Medical School and Vice Chair of Technology and Innovation at the Beth Israel Deaconess Medical Center in Boston. He graduated from Cornell University and Weill Cornell Medical School. Dr. Jones completed residency at Washington University-Barnes Hospital where he did a fellowship at the Washington University Institute for Minimally Invasive Surgery. He then joined the faculty at Parkland Hospital - UT Southwestern Medical Center where he established the Southwestern Center for Minimally Invasive Surgery in Dallas. He was recruited to Harvard in 2003 where he established the Carl J. Shapiro Simulation and Skills Center. Dr. Jones is Past-President of the Association for Surgical Education and President-elect for the Society of American Gastrointestinal and Endoscopic Surgeons. He has been honored as the James IV Association Traveler, ASE Distinguished Educator Award, SAGES Leadership Award and American Society of Metabolic and Bariatric Surgery (ASMBS) Patient Safety and Quality Award. His research has focused on laparoscopy, obesity and skill acquisition.

Stephanie B. Jones, M.D., June 20, 2016 | 7 a.m.

Stephanie B. Jones, M.D., is Vice Chair for Education in the Department of Anesthesia, Critical Care and Pain Medicine at Beth Israel Deaconess Medical Center in Boston, Mass. She received her undergraduate degree from Cornell University and completed her medical school and anesthesia residency at Washington University, St. Louis. She joined the staff at Beth Israel Deaconess in 2003 where she holds the rank of Associate Professor, Harvard Medical School. Her clinical interests include the anesthetic implications of obesity and bariatric surgery. She has served as a member of the statewide Weight Loss Surgery Expert Panel, on the Anesthesia Task Force for the Betsy Lehman Center for Patient Safety, and President of the International Society for Perioperative Care of the Obese Patient. She is Editor-in-Chief of International Anesthesiology Clinics and UpToDate Anesthesiology. A 2009 graduate of the Harvard Macy Institute Program for Educators in Health Professions, Dr. Jones served on the Board of Directors of the Society for Education in Anesthesia and is committed to exploring best practices in teaching, feedback, and evaluation to provide the finest training across the medical education continuum.

Rod of Asclepius over Mackenzie Hall. Photo by Daniel McClintick
Thomas Krummel, M.D., has served in leadership positions in many of the important surgical societies including the American College of Surgeons, the American Surgical Association, the American Board of Surgery, the American Board of Plastic Surgery, and was the President of the American Pediatric Surgical Association for 2013-2014. Dr. Krummel has lectured throughout the world, is author or co-author of over 300 publications, chapters, abstracts and books and he has mentored over 200 students, residents and post docs.

Throughout his career, Dr. Krummel has been a pioneer and an innovator.

• While just a surgical resident, he formed what was then the world's second ECMO team. The success of that team served as a major impetus to widespread adoption of this now well-established technique.

• He helped “jump start” the study of the cellular and biochemical mechanisms of scarless repair in the fetus; his work has been funded by the NIH for over 18 years. He is the recipient of over $3 million in research funding over his career.

• Over the last 20 years, Dr. Krummel has been a pioneer in the application of information technology to simulation-based surgical training and surgical robotics. Dr. Krummel, along with Dr. Kenneth Salisbury, Professor of Surgery and Computer Science at Stanford, is the recipient of one of the first NIH Phased Innovation R21/R33 programs to develop collaborative simulation-based surgical training systems. For his work in this area and in surgical robotics, he has received two ComputerWorld Smithsonian Awards.

• For more than 15 years, he has partnered with Dr. Paul Yock to direct the Biodesign Program at Stanford. This program is designed to teach the invention and implementation of new surgical technologies through interdisciplinary research and education at the emerging frontiers of engineering and the biomedical sciences (biodesign.stanford.edu). There are now 16 similar programs on three continents and more than 120 graduates.

• Dr. Krummel has served as a consultant to the medical device industry. He has served on numerous Scientific Advisory Boards and Board of Directors of multiple successful medtech device start-ups.

• Dr. Krummel is Chairman of the Fogarty Institute for Innovation Board of Directors and President of the International Scientific Committee at IRCAD, University of Strasbourg, France. Dr. Krummel served on the American College of Surgeons Committee on Emerging Surgical Technology and Education (CESTE) for 20 years.

• Dr. Krummel played a fundamental role in the collaboration between SAGES and the ACS leading to the successful Fundamentals of Laparoscopic Surgery (FLS) assessment tool. His concepts and thoughts are embodied in a number of laparoscopic, robotic and radiofrequency energy devices.

• For his biomedical engineering contributions, Dr. Krummel was recently elected to the American Institute for Medical and Biological Engineering, one of very few surgeons and the only pediatric surgeon to be elected to fellowship.
Richard D. Schulick, M.D., M.B.A., F.A.C.S., is Chair of the Department of Surgery at the University of Colorado School of Medicine. He also holds the Aragón/Gonzalez-Giusti Chair in Surgery. Dr. Schulick came from the Johns Hopkins Medical Institutions where he was Chief of the Surgical Oncology Division. He was head of a Department of Surgery that included seven clinical divisions (Cardiothoracic, GI, Tumor & Endocrine Surgery (which includes general surgery, gastrointestinal, trauma, burn, surgical oncology and breast), Pediatric Surgery, Plastic and Reconstructive Surgery, Transplant Surgery, Urology, Vascular Surgery and Podiatry) with 155 full-time regular faculty, 39 research faculty, 73 clinical faculty, 123 residents and fellows, and 68 staff.

As the son of a U.S. diplomat, Dr. Schulick grew up around Washington, D.C., in Burma, Thailand, and in India. He received his undergraduate degree in chemical engineering in 1985, medical degree in 1989, and master’s in business education in 2010, all from Johns Hopkins University, and completed a residency in General Surgery there in 1996. He completed fellowships in clinical pharmacology and immunology at the National Institutes of Health, both in 1993, advanced gastrointestinal surgery at Johns Hopkins in 1997, and surgical oncology at Memorial Sloan-Kettering Cancer Center in 1999.

Schulick, who was on the Johns Hopkins faculty for 13 years, is a recognized leader in the fields of pancreatic, hepatic, and biliary surgery, as well as other areas in cancer surgery. His scientific interests are in the area of tumor immunology. He has held numerous grants from the National Institutes of Health to study vaccine therapy of cancer. He has pioneered the use of genetically engineered bacteria as well as genetic modifications of cancer cells to treat human cancer. He has also received recognition as a highly effective educator.

A deputy editor of the Archives of Surgery, Schulick has served on the editorial boards of several journals in the field of surgery. He has authored or co-authored more than 230 peer-reviewed scientific papers, invited manuscripts, and book chapters. He has obtained funding from both corporate and government agencies, including K23 and R01 funding, and has served on study sections of the National Institutes of Health. Dr. Schulick is a member of various organizations including the American Surgical Association, Society of Clinical Surgeons, American College of Surgeons, Society of Surgical Oncology, Americas Hepato-Pancreato-Biliary Association, Halsted Society, Western Surgical Association, Southern Surgical Association and James IV Association of Surgeons.
Surgery Research and Innovation

The Department of Surgery would like to congratulate the following residents and faculty on their recent achievement awards, podium presentations, and grants:

**Resident Podium Talks and Awards**

**JENNIFER BURG, M.D.**

*Graft outcomes in pediatric kidney transplants are better with laparoscopic donor nephrectomy and high volume centers.* American Transplant Congress, Boston, Mass.

*Best Oral Poster of Session* - Pacific Coast Surgical Association

**CHRISTOPHER CONNELL Y, M.D.**

*The accuracy and clinical utility of point of care platelet function assays in the adult trauma population.* Western Trauma Association Meeting, Squaw Valley, Calif.

*Thrombelastography based dosing of enoxaparin for thromboprophylaxis: A prospective randomized trial.* Pacific Coast Surgical Association, Waikoloa, Hawaii

*A night float week in a surgical clerkship improves student team cohesion.* North Pacific Surgical Association, Portland, Ore.

*PIPS guided quality improvement filters can significantly reduce CT imaging in pediatric trauma patients.* Pediatric Trauma Society, Scottsdale, Ariz.

*Winner, Resident Paper Competition* - North Pacific Surgical Association

**KELLY HAISLEY, M.D.**

*Increasing tumor length is associated with increased regional lymph node metastases and decreased survival in esophageal cancer.* North Pacific Surgical Association, Portland, Ore.

*Extended intervals between completion of neoadjuvant chemoradiation and surgical resection are associated with higher rates of complete pathologic response in esophageal cancer.* Pacific Coast Surgical Association, Waikoloa, Hawaii


*Fletcher Award* - Department of Surgery, OHSU

*Recognition of Excellence Award & Travel Scholarship* - SAGES

**SHEENA HARRIS, M.D.**

*Normal lower extremity duplex findings in patients with left ventricular assist devices: A basis for vascular laboratory interpretation.* Vascular and Endovascular Surgery Society, Park City, Utah

*VC filter penetration into duodenum presenting with hypotension and gastrointestinal bleeding.* Pacific Northwest Vascular Society, Seattle, Wash.

*Increased rate of lower extremity revascularization does not decrease major lower extremity amputation.* Association of Veterans Administration Surgeons, Miami, Fla.

**JARED MADSEN, M.D.**

*Joint denervation in the digits: Technique and patient satisfaction.* Northwest Society of Plastic Surgeons 54th Annual Scientific Meeting, Kauai, Hawaii

*Best Resident Paper* - Northwest Society of Plastic Surgeons 54th Annual Scientific Meeting, Kauai, Hawaii

**MATTHEW LEWIS, M.D.**

*Utility of the vertical rectus abdominis myocutaneous flap for abdomino-perineal resection and pelvic exenteration defects: The OHSU experience.* Northwest Society of Plastic Surgeons 54th Annual Scientific Meeting, Kauai, Hawaii

**M. ANNE RADECKI, M.D.**

*Intraoperative evaluation of nerve cytoarchitecture using high frequency ultrasound.* Northwest Society of Plastic Surgeons 54th Annual Scientific Meeting, Kauai, Hawaii

**ELIE RAMLY, M.D.**

*Systematic evaluation of national surgical capacity in Lebanon in times of crisis and refugees.* ACS Clinical Congress, Chicago, Ill.

*The state of the union: Nationwide absence of uniform guidelines for the pre-hospital use of tourniquets to control extremity exsanguination.* American Association for the Surgery of Trauma Annual Meeting, Las Vegas, Nev.
Darryl Schuitevoerder, M.D.


Sarah Walcott-Sapp, M.D.

Increased systolic load decreases elastin content and increases diameter of the developing aorta, Western Thoracic Surgical Association Meeting, Waikoloa, Hawaii

Justin Watson, M.D.

Lyophilized plasma prevents endothelial leak and acute hypoxemia following traumatic hemorrhage: a preliminary study. Region X ACS Committee on Trauma Meeting, Centralia, Wash., and ACS National Committee on Trauma Resident Competition, San Diego, Calif.

A statewide teleradiology system reduces radiation exposure and charges in transferred trauma patients. North Pacific Surgical Association, Portland, Ore., and Sommer Memorial Lecture Series, Portland, Ore.

OHSU Resident Paper of the Year - OHSU School of Medicine

Davis Yonge, M.D.

Optimizing the trauma triage system: a stepwise analysis of level 3 activations. Region X ACS Committee on Trauma Meeting, Centralia, Wash.

Faculty Podium Talks, Awards and Grants

Karen Brasel, M.D.

Patient-Centered Outcomes Research Institute (PCORI) Grant. Navigating high risk surgery: Empowering older adults to ask questions that inform decisions about surgical treatment

James Dolan, M.D.

2016 Biomedical Innovations Grant – OHSU

Juliana Hansen, M.D.

Transgender breast surgery. Northwest Society of Plastic Surgeons 54th Annual Scientific Meeting, Kauai, Hawaii

Laszlo Kiraly, M.D.

Obesity and critical care. American Society of Parenteral and Enteral Nutrition, Austin, Tex.

OHSU School of Medicine Grant. Development of a new high fidelity simulator

Sean Orenstein, M.D.


Ventral hernia repair and preop optimization. Northern Plain Surgical Society Meeting, Denver, Colo.

Rodney Pommier, M.D.


Prevention and management of interoperative carcinoid crisis. United Kingdom and Ireland Neuroendocrine Tumor Society, London, U.K.

Resection of primary small bowel and pancreatic neuroendocrine tumors and debunking of liver metastases. The International Neuroendocrine Tumor Symposium, Vail, Colo.

Debulking surgery for neuroendocrine liver metastases: the debulking threshold should be changed from 90% to 70%. The Society of Surgical Oncology, Boston Mass.

Mitchell Sally, M.D.

Young Innovator Award - The American Society of Transplantation

Martin Schreiber, M.D.

Laerdahl Research Award - Society of Critical Care Medicine

Martin Schreiber, M.D. and Belinda McCully, Ph.D.

Department of Defense US Army Medical Research Acquisition Activity Grant. Mesenchymal stem cells for the prevention of acute respiratory distress syndrome after pulmonary contusion and hemorrhagic shock.

Liana Tsikitis, M.D.

Surgical treatment of patients with Lynch syndrome, hereditary colon cancer: Need for communication and cooperation. Athens, Greece

David Zonies, M.D., M.P.H., F.A.C.S., F.C.C.M.

ON MARCH 5, 2016, clinicians and scientists met to discuss contemporary topics in esophageal cancer at the eighth annual Western Esophageal Cancer Action Network (WECAN) Research Forum. The forum is an annual multidisciplinary meeting of experts in the field of esophageal cancer held at the OHSU Knight Cancer Institute and sponsored, in part, by the Michael J. Newton Esophageal Cancer Research Foundation. This year the visiting professor was Karyn Goodman, M.D., from the University of Colorado. Dr. Goodman is an internationally recognized expert in radiation medicine who presented an outstanding discussion on emerging imaging technologies and intensity modulated radiation therapy for esophageal cancer. She reviewed advances in imagining techniques that help guide radiation for locally advanced tumors. These methods allow precise targeting of esophageal tumors with the intent of reducing toxicity and improving treatment results.

Presenters Missy Wong, Ph.D., Sophia Bornstein M.D., Ph.D., and Nima Nabavizadeh, M.D., discussed a wide range of groundbreaking basic science research happening at OHSU. Topics included: cancer and host immune cell fusion as a newly described mechanism of tumor progression, examinations of the metastatic tumor microenvironment, and a pilot project investigating circulating plasma tumor DNAs to assess response to chemoradiotherapy. These projects have potential to change the way clinicians understand tumor progression and response to therapy. Furthermore, circulating tumor DNAs represent a new tool to detect the presence of esophageal cancer in patients without the need for expensive and invasive testing.

A number of important research studies from the OHSU Department of Surgery were also presented. Under the guidance of John Hunter, M.D., and James Dolan, M.D., visiting research resident Patrick McLaren, M.D., presented on his project aimed at identifying genetic markers in the tumor genome that are responsible for a favorable treatment response. Dr. McLaren is establishing a tissue bank of esophageal cancer biopsies that can be used to study variations in tumor genetics. Preliminary results from Dr. McLaren's study identify two specific genes, CCL28 and S100A2, which appear to be associated with a pathologic complete response to neoadjuvant therapy in esophageal cancer.

Also working with Drs. Hunter and Dolan, OHSU research resident Kelly Haisley, M.D., discussed her trials of a new medical device aimed at early detection of esophageal cancer. The device is a small encapsulated sponge that is used to collect esophageal mucosal cells. The sponge is attached to a long string.
The Department of Technology Transfer and Business Development at OHSU hosted its fourth annual **Startup Symposium** on March 31, 2016

**STARTUP SYMPOSIUM:** TTBD initiated this campus-wide conference in 2012 as a way to provide support to university startups and faculty entrepreneurs. This year the TTBD invited a number of out-of-state corporate venture capitalists, regional venture investors, locally-based angel networks and business development groups from large pharmaceutical companies to participate. Their goal is to connect the Portland business community, resources, and providers with OHSU's startup companies and commercialization efforts.

The 2016 Symposium event focused on *Connecting the Pacific Northwest Life Science Ecosystem* and included early and late stage investors from San Francisco to Vancouver, BC. General Electric was the anchor sponsor for this year's program, including a keynote address from the President and CEO of GE Healthcare, John L. Flannery. TTBD partnered with the Oregon Translational Research and Development Institute (OTRADI) to add a poster session with a cash award for OHSU startup companies, in addition to a networking mixer with regional investors and industry.

A new component to this year's symposium was an evening Fireside Chat with regional and national investors on March 30, 2016. The discussion topic was *Investment trends and capital solutions in the life science startup sector*. TTBD partnered with OHSU's Department of Surgery to attract OHSU surgeons and clinicians with an interest in investment and innovation to this discussion. TTBD hosted workshops following the Fireside Chat for invited guests and OHSU community members. Topics included, *Starting a company* and *Angel investors: How they impact the Entrepreneurial Ecosystem*.

and the patient swallows the sponge which is then gently retrieved via the string. Sponge scrapings are then sent for cytology and genetic evaluation. If successful at detecting early cancer, the swallowed sponge could replace upper endoscopy as a screening tool for esophageal cancer. In addition, Dr. Haisley presented her findings from a study investigating the best chemotherapy regimen for esophageal cancer. On review of the OHSU Esophageal Cancer Disease Registry, Dr. Haisley found significantly improved overall survival with the older chemotherapy regimen of Cisplatin/5-FU compared to the more commonly used Carboplatin/Paclitaxel. Dr. Haisley's work demonstrates a need for further investigation into the best systemic treatment regimen for esophageal cancer.

Finally, Professor of Surgery **Bruce Wolfe, M.D.,** discussed the role of obesity is esophageal cancer. Dr. Wolfe specializes in bariatric surgery and presented a thorough review of the literature related to weight loss surgery and esophageal cancer. Obesity has been shown to be associated with a number of malignancies and esophageal cancer is no different. The role of weight loss surgery at reducing the future risk of esophageal cancer has yet to be robustly studied.

With the support of the Newton Esophageal Cancer Research Foundation, the 2016 WECAN forum was a great success. The sensational esophageal cancer research program at OHSU is looking forward to more multidisciplinary collaborations between physicians and scientists across fields to make strides towards curing esophageal cancer.
ON OCTOBER 21, 1892 William Kenneth Livingston was born in rural Wisconsin. At age 17 he moved to Oregon and matriculated at the University of Oregon. Graduating with a BA in 1913, he married Ruth Forbes Brown, and they moved to Pendleton, Ore. where he taught high school chemistry and physics. Their first son, Kenneth Edwin, was born in 1914. After teaching for two years, Livingston returned to the University of Oregon in Eugene where he studied zoology and then successfully applied to Harvard Medical School. Livingston graduated Harvard cum laude in 1920 and was selected as an intern at the prestigious Massachusetts General Hospital. While he was a medical student their second son, Robert Burr, was born. Both sons would go on to have distinguished careers in medicine themselves.

In the first weeks of his internship Livingston confronted a question that would be a focus of interest for the rest of his professional life: What causes visceral pain? Livingston admitted a man with severe abdominal cramps, and held retractors during the laparotomy while a staff surgeon identified an obstructing sigmoid colon cancer. The surgeon delivered a loop of transverse colon through an upper abdominal
incision and instructed the interns to wait two days while the serosa adhered to the skin edge before they opened the loop. Livingston, unfamiliar with the procedure, recruited a more senior intern to demonstrate how to open a loop colostomy. They retrieved a plumber’s gas blow torch and a soldering iron from an operating room equipment closet. When the two arrived at the bedside with the flaming blow torch, the terrified patient accused them of planning torture; the senior intern guaranteed the patient he would feel no pain. Instructing Livingston that the soldering iron should be heated until “red, not white hot,” the senior intern applied the glowing iron to the anti-mesenteric side of the colon and cauterized a hole into the lumen. Decades later Livingston still vividly recalled how “the room began to fill with the stench of burning flesh. Stool and gas bubbled through the cauterized hole.” Livingston was astonished that the patient felt no pain from the cauterity, and rather was relieved of his agonizing cramps as the distended colon decompressed. Livingston was befuddled and fascinated. He became obsessed with understanding the neuro-mechanisms that caused pain. He scrutinized the published literature: “I did not find the information I sought in my first session in a medical library nor in many subsequent sessions.” It would require 15 years of study, experimentation and clinical experience before Livingston felt able to assemble and record his conclusions and publish these in his first book, The Clinical Aspects of Visceral Neurology. [WK Livingston, Charles C. Thomas, Springfield, Illinois 1935]. In a review of that text, the distinguished Yale surgeon A.W. Oughterson wrote: “By far the best treatise available on the clinical aspects of visceral neurology.”

Upon completion of his Boston internship in 1922, Livingston and his young family returned to Eugene where for three years he was the Director of Student Health at the University of Oregon. However, Livingston aspired to become a surgeon. He convinced Elliot Cutler, M.D., the Professor of Surgery at Case Western Reserve University School of Medicine and Chief of Surgery at Lakeside Hospital in Ohio, to accept him as a surgery house officer. He finished training in 1929 and left Cleveland for Portland where Livingston started a surgical practice. He also secured a part-time appointment to the faculty at the University of Oregon Medical School as a Clinical Associate
Continued: William K. Livingston

in Surgery and Instructor in Parasitology. Livingston continued to investigate pain, collaborating with George Burget, Ph.D., Professor of Physiology and studying the neuroanatomy of the sympathetic nervous system [The pathway for visceral afferent impulses from the forelimb of the dog. Burget GE, Livingston WK, *Am J Physiol*. 1931; 97:249-253].

Meanwhile, Livingston acquired a reputation as a surgeon who would evaluate and treat patients’ intractable pain syndromes. Relying on detailed histories and physical examinations he deduced that in some patients the pain syndrome was causalgia and attributable to aberrant afferent signals to the brain through the sympathetic nervous system's axons and ganglions. In the 1930s he served part-time as a medical examiner for the Oregon State Industrial Accident Board, and evaluated loggers and mill workers disabled by pain following amputations. Livingston refined techniques for achieving temporary relief of pain by injecting procaine near responsible nerves and sympathetic ganglion. Livingston perfected several pain-relieving operations on nerves and blood vessels. And Livingston, a perpetual scholar, published his results. Livingston was candid; he reported sympathectomy could achieve lasting pain relief, while he acknowledged in some patients the procedure incongruously failed. On the eve of World War II, Livingston had written his second book: *Pain Mechanisms: A physiologic interpretation of Causalgia and its related states*. [WK Livingston, The Macmillan Company, New York, 1943]. He frankly summarized his thoughts: “There is no final conclusion to be drawn from this study of pain mechanisms in the causalgic states. The subject is too complex...”

Livingston venerated the clinical scholarship of S. Weir Mitchell (1829 – 1914), an American physician who wrote *Injuries of Nerves and Their Consequences* (1872), a landmark manuscript recording the debilitating pain endured by soldiers wounded in the American Civil War. Mitchell had coined the term causalgia, known today as complex regional pain syndrome. On January 11, 1943, Livingston, a 51-year-old volunteer, swore an oath and accepted a commission as Lieutenant Commander in the Medical Corp of the U.S. Navy. He was assigned to the U.S. Naval Hospital Oakland, a complex of interconnected wooden barracks hurriedly constructed in 1942-43 on a golf course. By the bloody summer of 1945 the hospital's 6,000 beds were filled. Livingston was assigned responsibility for sailors and marines who

Dr. Livingston and his colleague Alan Gregg, M.D. (left) in 1954; at that time, Gregg was Vice President of the Rockefeller Foundation and a long-time instrumental figure in directing support for medical research and medical education
had peripheral nerve injuries. During his three years of service at Naval Hospital Oakland, he treated over 1,200 patients with nerve injuries, the majority of which were high-velocity missile wounds sustained in the Pacific Island campaigns [Management of war injuries to peripheral nerves. WK Livingston, Am J Surg. 1948 Nov;76(5):537-40]. He recorded in detail their recollection of events at the moment they were injured, their chronic symptoms and physical findings, and their responses to treatments. He explored and repaired hundreds of nerves. In July of 1947, Livingston summarized his experiences treating combat casualties when The Royal College of Surgeons of England invited him to deliver the prestigious Moynihan Lecture at Oxford. Typical of the scholarly Livingston, he described in detail several syndromes of abrupt neuro-deficits in the war-wounded that he incompletely understood and thus called for further research. Livingston was always more inquisitive than dogmatic.

Honorably discharged with a rank of Captain in October, 1946, Livingston returned to Portland. The sudden death on April 18, 1947 of Thomas Joyce – the legendary Portland Clinic surgeon who had served part-time for 13 years as the Mackenzie Professor of Surgery – provided Dean David Baird the opportunity to implement his vision: faculty at the Medical School should have a full-time appointment, be paid a salary, and committed to research. Dean Baird’s goal was to transform the provincial University of Oregon Medical School into a world class institution of teaching, research and clinical care. Baird anticipated that post-war Congress would generously appropriate funds to support medical education and research at academically qualified institutions. On August 1, 1947, Dr. William K. Livingston, age 56, became the Mackenzie Professor of Surgery, assumed responsibility as Chief of Surgery at the Multnomah County Hospital and began supervision of the general surgery residency. Livingston established a funded research lab to study the neurophysiology of pain. He also started a weekly multidisciplinary Pain Clinic held in the Medical School's outpatient clinic where surgeons, anesthesiologists, neurologists and physiologists evaluated patients with intractable pain. Decades later, Livingston would be credited as pioneering the concept of a team-approach to patients with intractable pain. As the Chief of Surgery of the Multnomah County Hospital, Professor Livingston delegated considerable authority to the Chief Surgery Resident. Clare G. Peterson, M.D., was one of those Chief Residents and in a 2000 interview recalled events in 1947: “The new full-time Chief of Surgery, Bill Livingston...was an unusual man...One of the greatest minds in surgery of the time, I think. But not really a surgeon’s surgeon.”

- Chief Resident Clare Peterson, M.D. (1947)
During Livingston’s tenure as Mackenzie Professor there was considerable turmoil as clinicians in practice in Portland attempted to thwart Dean Baird’s construction of a University Hospital. Livingston recruited several full-time faculty, including Peterson and Dr. William Krippaehne, who educated the medical students and trained the surgery residents.

In 1957 Professor Livingston turned 65 and retired. He and Ruth moved to their ranch on the Metolius River in Central Oregon. Livingston completed a final manuscript on pain, but had not submitted it for publication when he died on March 22, 1964 at the age of 72. Thirty years later a distinguished scholar in pain research, Ronald Melzack, Ph.D., who had worked as a post-doctoral fellow with Livingston in the mid 1950s, achieved posthumous publication in 1998 of Pain and Suffering [Pain and Suffering. WK Livingston, IASP Press, Seattle, 1998].

William K. Livingston was a man of many accomplishments. He was inquisitive, undaunted by the challenges and disappointments of attempting to understand a medical enigma. Furthermore, Livingston pursued through his life peripatetic interests. He was an accurate archer, accomplished clarinetist, climbed Oregon’s mountains, sailed the Pacific, served as President of the Portland Art Museum and after retirement “achieved some renown” as a potter. William K. Livingston should be remembered as the first full-time Mackenzie Professor of Surgery, an internationally respected scholar and expert in tertiary clinical care. He contributed to the successful evolution of the University of Oregon Medical School into an academically accomplished and nationally renowned institution.

At Dr. Livingston’s memorial service, Hance C. Haney, M.D., Professor of Medicine commended his colleague and friend: “He spent his whole life to empathize, to understand and to cure those afflicted with pain, especially those whose pain was reckoned by the best medical authorities to be intractable.”
Dear Mackenzie Society Members,

I write to you with great appreciation as I review the past year and see a surge in new members joining the Mackenzie Society, consisting of recent graduates, new faculty and long-time alumni of the department. I believe this is a reflection of both your belief in the OHSU Department of Surgery as a strong educator of new surgeons as well as your desire to develop the program that shaped your lives in such a profound way. Whether you stayed on as faculty at OHSU or made your way out into the world (and perhaps later returned!), I extend my warm wishes and thanks. This next year will see exciting new developments in the residency program as it moves towards a redesign allowing for competency-based training and greater operative experience for residents, as well as a new graduation schedule that staggers fellowship start and stop dates with resident graduation. As surgical techniques continue to evolve and improve at an ever-quickening pace, our residency program sprints ahead as a leader in the education of skilled and practiced surgeons.

Have a wonderful summer and I’ll look forward to seeing many of you in October for the ACS Clinical Congress.

- Kim

To learn more about The Mackenzie Society, visit www.ohsu.edu/surgery or email Michelle Kleyne at kleyne@ohsu.edu
Welcome 2016-2017 Intern Class!

Martin de la Presa Pothier  
Alix Dixon  
Ivy Gardner  
Ismael Grachico  
Elliot Harmon  
Katie Johnson  
Nathan Knapp  
Danny Labuz  
Shannon Lowell  
Melissa Lin  
Matt Noble  
Megan Penna  
Michael Schmitt (plastic surgery)  
Chris Sudduth  
Thomas Sutton  
Kim Thai  
Benjamin Timmons (plastic surgery)  
Kate Watson  
Sarah Wonn

University of Utah  
Tulane University  
Boston University  
Eastern Virginia University  
Oregon Health & Science University  
East Tennessee University  
Oregon Health & Science University  
University of Minnesota  
University of California, Davis  
University of Arizona  
Western University College of Osteopathic Medicine  
University of Washington  
Emory University  
University of South Florida  
Oregon Health & Science University  
University of Utah  
Oregon Health & Science University  
Medical College of Georgia
Belinda McCully, Ph.D.
Resident Research Director

The Department of Surgery welcomed Belinda McCully, Ph.D., to the role of Resident Research Director this past year. Dr. McCully is a Research Assistant Professor in the Division of Trauma, Critical Care and Acute Care Surgery. Her research focuses on the effects of obesity on blood pressure regulation and coagulation, and methods for optimizing the storage and use of blood products.

To learn more about research opportunities during residency, visit www.ohsu.edu/surgres

After two years of either stubbornly dry or wildly unpredictable winter weather, Mt. Hood finally got a decent snow cover for this year’s Resident Ski Day. Success!
Questions or comments? Email On the Cutting Edge Editor Sara Szymanski at szymanss@ohsu.edu – we’d love to hear from you.

OHSU includes the Schools of Dentistry, Medicine, and Nursing, OHSU Hospital and Doernbecher Children’s Hospital, numerous primary care and specialty clinics, multiple research institutes, and several outreach and community service units.

Change can’t happen if we see things just one way. That’s why diversity is so important to OHSU.