SPRING 2020

Penn Surgery Society NEWS

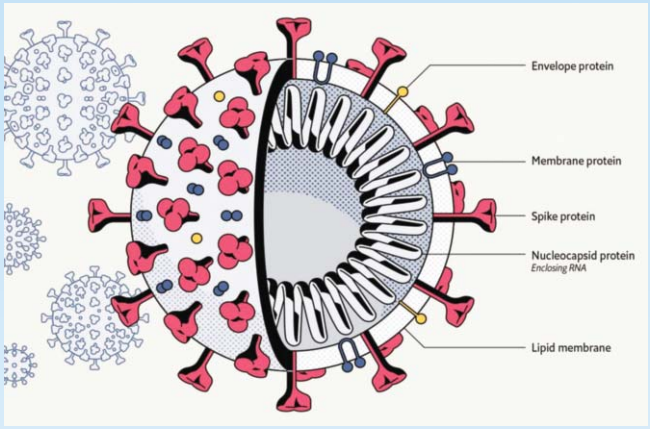
The Penn Surgery Society News is published quarterly for its members, colleagues and friends of the Department of Surgery.
For submissions, inquiries or comments, please contact clyde.barker@pennmedicine.upenn.edu.

Message from the Chair

COronaVIrus Disease 2019

Ron DeMatteo, MD
John Rhea Barton
Professor and Chair
of Department of Surgery

It is hard not to comment on the current pause of the world. The disease COVID-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, photo). Coronavirus, an RNA virus, was named because of its structural resemblance to a crown. The virus is transmitted by respiratory droplets and the incubation period is 2-14 days. The virus enters type II alveolar cells in the lung via angiotensin-converting enzyme 2. There is no specific treatment and the case fatality rate is estimated at 2%.



The origin of the virus is unclear, but the pangolin (photo) and the bat are prime suspects (Nature 2/26/20). The pangolin is an ant-eating animal that resembles an aardvark, but with scales. It is an endangered species because of deforestation and poaching. Pangolin meat is considered a delicacy by some and the scales are used in medicinals. Apparently, pangolins are the most trafficked animals in the world. The severe acute respiratory syndrome (SARS) coronavirus (SARS-CoV) probably arose from bats and then was transmitted to civet cats, which are also ingested. SARS-CoV was responsible for 800 deaths. By March 18, COVID-19 has already killed nearly 9,000 patients, 100 from the U.S.


Pangolin

The impact on physicians has been considerable. The Atlantic (3/11/20) reported on "The Extraordinary Decisions Facing Italian Doctors." Now with over 35,000 patients, many in small towns, doctors have had to ration care, analogous to wartime triage. On March 13, The American College of Surgeons issued a statement that elective operations should be delayed so that physicians can better handle a potential disease surge.

At Penn, hospital visitors are now prohibited, medical students and college students have been dismissed, and most employees are working from home. The ORs are already running less than 40%. Basically, all institutional meetings are now virtual. Our recent M&M (photo, 3/12/20) included only a few attendings and the presenters, with everyone else remoting in. The Penn Relays have been canceled for the first time since its inception in 1895.


M & M
3/12/20

The rapidity of disease spread underscores the interconnectedness of modern civilization. For instance, there are over 100,000 daily airplane flights worldwide. Given the current state of medicine and technology, it seems that we can avoid the influenza pandemic of 1918 that ended in 50 million deaths. Hopefully, this science fiction movie will end in the next few months, minimizing affliction while providing an international playbook for potential future infectious disease outbreaks.

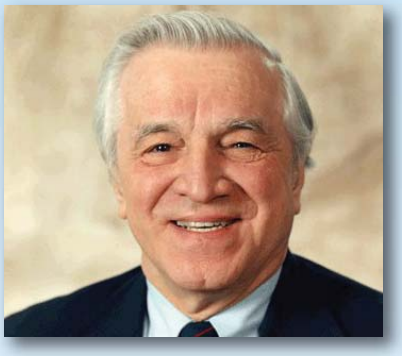
IN THIS ISSUE

From the Editor

Clyde F. Barker, M.D.

How do Surgeons Get That Way?

Stanley Dudrick, one of our most distinguished members died on January 18, 2019. Research he conducted while a HUP resident (1962-67) established total parenteral nutrition. TPN has saved millions of lives and is considered one of the 20th century's most important contributions in all of Medicine. The importance of this research and Stan's further contributions to nutritional science were the basis of some 150 major awards and prizes including the most prestigious ones of the American Medical Association, the American Surgical Association, the American Academy of Pediatrics and many other scientific societies. Our department of surgery and the School of Medicine have named him their distinguished graduate. Endowed chairs, hospitals and streets have all been named for him.



Stanley Dudrick

But as I mused about the loss of my friend, I was not thinking about the prizes. Instead I was reflecting on his personal qualities. Somehow this reminded me of a lecture that Stan gave at HUP a few years ago. Its enigmatic title was intriguing: "**How Do Surgeons Get That Way**"**?** I wondered what way and what surgeons? Even discounting Stan's propensity for hyperbole, he made these surgeons sound pretty great: "wise, disciplined, decisive, thoughtful, courageous, tireless, generous, compassionate", indeed heroic, especially as compared to specialists less favored by Stan, such as internists. Stan's audience for the lecture was comprised mainly of surgical residents, so maybe to inspire these young surgeons he conjured up a hypothetical surgeon, an imaginary one, with noble characteristics. More likely, since the lecture was at HUP, he was remembering, perhaps exaggerating, what his fellow residents were like when he trained here. It was the 1960s, a time when open-heart surgery was just beginning and transplantation, laparoscopic and endovascular surgery and gene therapy were still in the future. His friends didn't realize that 6 decades later what Stan was doing in the Harrison Department with a few dogs would be compared favorably with these other important medical advances.

Stan's fellow residents were in fact also quite good. During the years while Stan was training at HUP, an even dozen of Dr. Rhoads' other residents were destined to become University department chairs. I guess Stan was the best of the bunch. In fact, Medscape ranks him in the top 25 most influential physicians of the last century. To me the surgeons Stan characterized in his lecture sounded a lot like himself. But how did our friend get to be so exceptional? I had a front row seat and I didn't know,

In another of the most interesting aspects of Stan's talk he asserted that surgeons place great value in their professional lineage. For some this is almost an obsession. He talked about the importance of this and claimed that it was unique to surgeons and lacking in other specialists. Was this the basis of his imaginary surgeon's lofty traits? As the professional linage of his possibly hypothetical surgeon Stan cited John Hunter (the father of scientific surgery), William Shippen (Penn's first surgery professor who was trained by Hunter), D. Hayes Agnew, I.S. Ravdin and Jonathan Rhoads. With a pedigree like that, surgeons ought to inherit some lofty traits.

So let's look at Stan's professional heritage, his family background and his career to see if we can understand how he **got that way**.

Stan grew up in Nanticoke, a little town in Pennsylvania's coal mining country. His Polish immigrant grandfather worked in the mines, as did his father as a teenager before he graduated from college and bought a farm where Stan worked as a boy. Stan was a talented and ambitious kid who couldn't wait to spread his wings and get away from his home town which he remembered as being grimy, smoky and smelling of the mines. He loved college at Franklin and Marshall which was clean and attractive. There he was highly successful, Phi Beta Kappa, class president and voted the outstanding member of his graduating class. Then during medical school at Penn where he was also class president, he explored surgical research during a summer job by working for heart surgeon Charles Kirby. He learned the intricacies of equipment and instruments used for the newly evolving procedure of cardiopulmonary bypass, learned them so well that he was hired as a technician to run the heart lung machine for open heart operations in both experimental animals and human patients. He also recalled that during animal experiments he was taught to operate by surgical resident Horace MacVaugh.

Then as a surgical resident at HUP, Stan became interested in surgical metabolism and nutrition. This led to a close relationship with surgery chairman Jonathan Rhoads, who had a similar focus on nutrition that he had inherited from his chief, I.S. Ravdin. For years both of these legendary senior surgeons

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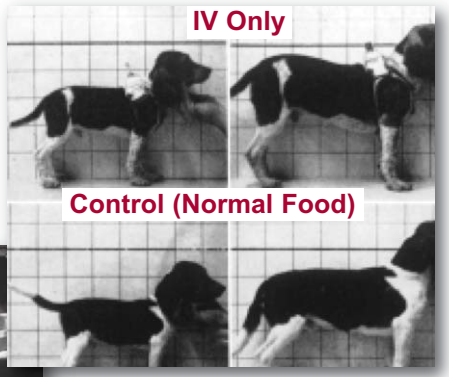
From the Editor (continued from page 2)

had dreamed of rescuing malnourished patients who were dying because they couldn't eat. Their longstanding research goal was supplying these patients with sufficient calories by vein to sustain them until they could eat. Not surprisingly this had also become the research assignment of a long list of HUP surgical residents who signed up to work in the lab of their chief, Jonathan Rhoads. Their attempts included giving high calorie lipid preparations by vein or administrating potent diuretics to help the patients get rid of excess water in high volume infusions. In another approach, increasing the concentration of intravenous nutrients to provide more calories sclerosed the peripheral veins used for the infusions. These experiments resulted in numerous publications but never reached clinical usefulness.



Dudrick SJ, Vars HM, Rawnsley HM, Rhoads, JE - *Total Intravenous Feeding and Growth in Puppies*, Fed Proc, 1966

As one more surgical resident working on intravenous nutrition in Rhoads' lab, Stan was also at first frustrated by the same problems as his predecessors. But he proved to be more imaginative, more persistent and harder working. To follow every step of the way in Stan's own account of his research trail, read the 66-page oral history he gave to the American Academy of Pediatrics. One step was infusing hypertonic solutions to a vein in his own arm. To his remorse, he confirmed that this led to painful sclerosis. This experience was a stimulus for Stan's conviction that concentrated nutritional solutions could be delivered only via high volume, fast flow central veins where they would provoke neither clotting or sclerosis. He first threaded catheters from the jugular vein into the superior vena cava or right atrium. This was tolerated and he was convinced that it would allow sufficient caloric delivery. But the dogs soon displaced the catheters, preventing the long-term treatment that would be necessary.

Wilmore DW, Dudrick SJ *Growth and Development of an Infant Receiving All Nutrients by Vein* JAMA 1968

Some accounts of the story indicate that it was Rhoads at this point who suggested they document the growth of newborn puppies to prove that they could live on IV feedings alone. In order to accomplish chronic treatment an ingenious harness was designed that the dogs could wear moving freely in their cages and not disturbing the flow of nutrients being administered 24/7. The harness secured and protected the intravenous cable with a swivel device that prevented tangling. This was the important contribution of an indispensable collaborator, Harry Vars, an imaginative inventor of laboratory equipment. In addition, Vars the surgery department's PhD biochemist also helped determine the optimal combination of essential amino acids, minerals and vitamins necessary to keep the dogs healthy and growing.

Stan's continuous and almost sleepless attendance and care of the puppies over several months was the feature most essential to the success of the experiment that demonstrated normal growth of the pups nourished only by vein. It was a classic. Despite there being only 4 pups in the study it was absolutely convincing. No statistics were needed.

In April of 1968 while the puppy work was still in the early publication stage, a starving human infant showed up at CHOP. Intestinal atresia and 2 failed operations had left the baby with less than an inch of functional intestine. Death was inevitable and immanent. Stan was called. Working closely with HUP resident Doug Wilmore, he succeeded in cannulating the central venous circulation with tiny catheters. Intravenous nutrition kept the baby alive and growing normally for more than a year.

The accomplishments of 1967-68 alone would have been enough to place Stan Dudrick in the pantheon of surgical research. But there was more to come. Stan accessed the central venous circulation with a cannula introduced by infraclavicular percutaneous puncture of the subclavian vein. This was the key to long-term treatment in human patients. Other important contributions were the introduction of home TPN, treatment of renal failure patients and promoting closure of intestinal fistulas.

After finishing his residency, and only 5 years on the Penn faculty, Stan was recruited to the University of Texas, Houston as the inaugural chairman of surgery in this new school. Modeling his department after HUP, over the next decade he trained a number

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From the Editor (continued from page 3)

of surgical residents who became department chairs or deans such as John Daly, Ted Copeland, Tom Miller and Wiley Souba. In 1988 Stan came back to Penn as chief of surgery at Pennsylvania Hospital. In 1994 he accepted an appointment as professor of surgery at Yale, and for most of the rest of his career he served as chairman of surgery at St. Mary's, a Yale affiliated teaching hospital. In his final few years, too restless and too committed to service for retirement, he taught at Geisinger's Commonwealth Medical School. Ironically this new school was near his old home town.

A Tale of Two Surgeon Scientists

Total parental nutrition ranks close to the top of medical research accomplishments of the 20th century. Because of its fame and importance, I suppose it was inevitable that there would be discussions about who was primarily responsible for TPN, Rhoads or Dudrick? In fact, over the year's ardent proponents of one or the other investigator have disagreed. An illustration of this can be seen by reviewing the sequence and timing of prizes that were awarded to them by the American Surgical Association (ASA), prizes honoring the same TPN work. In 1979 the ASA gave its highest award, the Medallion for Scientific Achievement to Jonathan Rhoads as an individual. Thirty years later in 2009 the American Surgical Association gave the same Medallion for Scientific Achievement to Stan Dudrick as an individual. These and many other awards went to one or the other or sometimes both, such as the ASA's Flance-Karl Award in 1997. But over time the pattern of distribution changed. During the first decade and a half TPN virtually always was attributed to the senior and much better known Rhoads, while Dudrick was likely to be mentioned only as an afterthought as part of the Rhoads team. This wasn't fair!

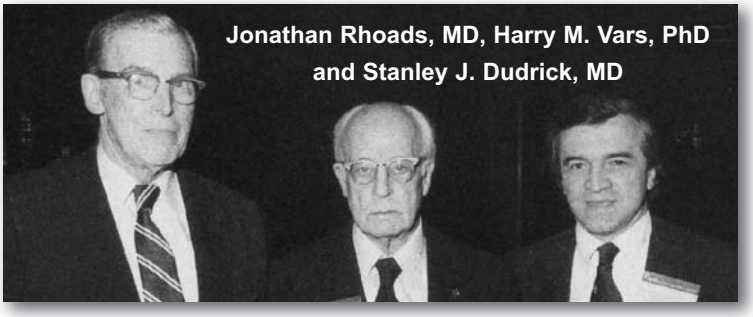
As Rhoads retired and faded from the scene while Dudrick continued to work productively in the field, he was likely to be credited as sharing the award. In the last few decades it has been appreciated that it was Dudrick that actually contrived and conducted the crucial experiments. Thus it is with justification that Stan now dominates accounts of the TPN research. Rhoads is often not mentioned at all. This isn't fair!

The truth is that Rhoads and Dudrick were both indispensable in the creation of TPN. Without Rhoads, Dudrick as a young resident on his own would never have had the opportunity or support to carry out the experiments and perhaps not even an interest in the nutrition field. Without Dudrick the definitive experiments might never have been envisioned and accomplished. Fortunately, from the very beginning the two surgeons recognized and were happy with their interdependence. While accepting the many prizes that came to each of them, they were unfailingly generous and gracious in crediting the other as a necessary partner.

Stanley Dudrick and Jonathan Rhoads

So if Stan in his lecture on how surgeons get that way was unintentionally portraying himself as the ideal, what was it that made him that way? His small town background, his native qualities of honesty, generosity, energy and drive were all important, perhaps necessary. But I believe another part of the formula was the importance he placed on his professional forbearers and heritage. Ravdin and Rhoads were responsible for the Department's original focus on surgical physiology, biochemistry and nutrition, all essential for the TPN work. I would like to think it was the Department's culture that prompted the two surgeons to be gracious in sharing the credit. Both of them were intensely proud of and loyal to their Penn linage and to the history and traditions of our department. They felt honored to be part of this long and illustrious linage and were committed to passing it on to future generations. Perhaps it is for this that Stan wanted us to remember him when he asked **How Do Surgeons Get That Way**.

Harry Vars: Unsung Hero of TPN



Jonathan Rhoads, MD, Harry M. Vars, PhD and Stanley J. Dudrick, MD

Now almost forgotten, for generations of HUP residents working on nutrition in Rhoads' lab, Harry Vars was the major mentor. He was a hands-on partner with Dudrick in perfecting the device that allowed continuous IV infusions in puppies. Although a member of the department of surgery he was a PhD biochemist who had a secondary appointment in that department and was a popular teacher of Penn medical students in their biochemistry course. His major role in the TPN work led the American Society of Parenteral and Enteral Nutrition to name an annual award for him.

Next-Gen Transplantation

Contributed by Paige Porrett, MD PhD

"This had better work."

That was all I had to say to the team as we walked out the front door of HUP. We were en route to the donor hospital to recover our first uterus for transplantation. What underwhelming language to summarize years of preparation and the gravity of the moment. We were the third program in the country to attempt a uterus transplant (UTx), and I was trying hard to forget that the first transplants at those two other centers had failed. Would we endure such failure as well?

Luckily, we didn't have to find out. The transplant was a technical success. Nevertheless, the possibility of failure haunted us for months as we navigated the complexities of pregnancy in a UTx recipient. Nobody slept well. But at long last, baby Benjamin arrived one year later. He is the second baby in the U.S. born to a recipient of a deceased donor uterus transplant and a bona fide scientific miracle.

Uterus transplantation was developed over the last few decades as a treatment for uterine factor infertility (UFI). UFI occurs when either the uterus is absent or in place but dysfunctional. While the first human UTx in 2001 was unsuccessful (Saudi Arabia), the first live birth in the world in 2014 (Gothenberg, Sweden) has inspired several programs in the world to attempt this complex procedure, including Penn.

UTx requires the generation of embryos via in vitro fertilization, transplantation of a graft from a deceased or living donor, and embryo implantation into the graft several months after transplantation to achieve pregnancy (see "Milestones"). As with other types of transplants, pharmacologic immunosuppression is required. However, after child bearing is completed, the uterus is removed and immunosuppression is stopped. The time course is typically 2-4 years per recipient and up to two live births have been permitted in most programs.

The transplant surgery is tricky for a variety of reasons, not the least of which is that the blood vessels are small and we are working in the pelvis. The primary surgical goals are 1) to re-establish blood flow between the graft and the recipient, and 2) anastomose the vagina between the graft and the recipient. Two simple steps take 8-10 hours of operative time, but three recipients to date have done well. Five transplants are planned in the current clinical trial.

Baby Benjamin, age 3 months, born from a transplanted uterus

More often than asking me how one does a uterus transplant, most people ask me why one would do such a thing. While it is true that couples afflicted with UFI can build a family through alternatives such as adoption or use of a gestational carrier, most people do not know that use of a compensated gestational carrier is legally protected in only a few states in the country. Patients are desperately seeking another option, as is showcased by that fact that over 1,000 women have applied to participate in Penn's trial alone in the last two years.

Despite the demand for UTx and its value, critics of UTx assure me that third party payors will never reimburse this procedure. After all, the costs of family building outside of natural conception have always been born by individuals, not payors. Nevertheless, I am hopeful that UTx will provoke change as it compels us to reflect on how we want our health care dollars spent. Many of us will pay a fortune into the health insurance system over the course of our lives, and most of us will recoup that "investment" during our end of life care. Would you redirect dollars from your end of life care to invest instead in the greatest source of joy in your life? I would. And I certainly don't want an executive in an insurance organization making that choice for me.

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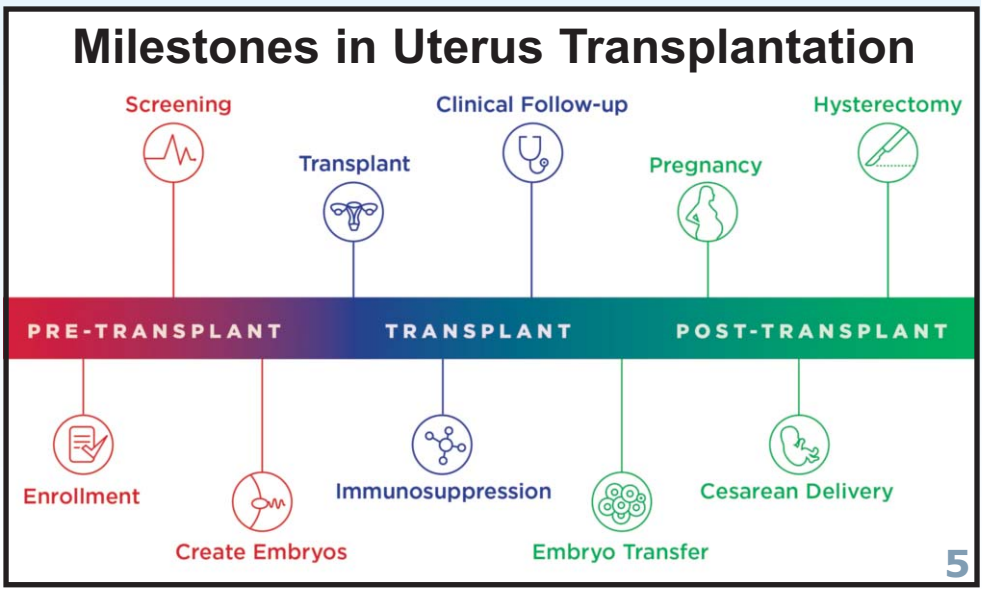


Transplantation *(continued from page 5)*

No matter the future of reimbursement for UTx, the value of this trial extends well beyond the impact to an underserved population. Through our study of biologic samples acquired from these recipients, we hope to gain knowledge which can be generalized to impact the health of both men and women. More significant than this research, however, is how UTx extends the therapeutic sphere of organ transplantation. It is utterly mind blowing to recognize that organ transplantation is now sufficiently safe and effective to benefit patients who do not have a lethal disease. Seventy years of innovation have paved the way for this next generation of transplants.

In short, transplantation saves lives, enhances lives, and now generates lives too. No other medical therapeutic has this versatility. I wish Tom Starzl could see us now.

Joe Woo Named 2020 Department of Surgery Distinguished Graduate Awardee

Joe Woo is the Department of Surgery's Distinguished Graduate awardee for 2020. As visiting professor at HUP he will deliver the Julius Mackie lecture.

Joe is a 1998 graduate of MIT. He then attended the University of Pennsylvania School of Medicine, graduating in 1992 as a member of AOA and recipient of the I.S. Ravdin prize as the top student in surgery.

As a HUP surgery resident he was outstanding. Among his accolades were the William Y. Inouye teaching award, which is voted by the medical students and the Leonard J. Perloff chief resident teacher, chosen by his fellow residents. Additional honors as a surgical resident included the surgical scholar award for scoring 99% on the American Board of Surgery in service exam, 1st place of the Pennsylvania Association of Thoracic Surgery residents and the American Heart Association's Vivien Thomas young investigator award.

Following residency Joe remained at Penn for a cardiothoracic fellowship under Hank Edmunds, and then as a faculty member. While an assistant professor of surgery he was named by *Philadelphia Business Journal* as an under 40 award winner, and by *Philadelphia Magazine* as one of 21 up and coming leaders of Philadelphia. He also won an American Society for Clinical Investigation travel scholarship. In 2012 he was the Luigi Mastroianni Clinical Innovator awardee.

Joe quickly became a nationally recognized clinician researcher and educator. He directed the Department's minimally invasive and robotic cardiac surgery program and the cardiac transplantation and mechanical circulatory support program. He developed several new approaches to minimally invasive techniques for mitral and aortic valve repair and reconstruction. He also performed over 350 operations a year. He frequently had American and foreign cardiac surgeons visiting Penn to learn his techniques and was often an invited national and international speaker on these procedures. He was also invited to perform operations in China, India and Japan. His laboratory was funded by NIH and investigated new paths to myocardial repair through angiogenesis. He was the principal investigator for several clinical device trials and translational scientific clinical trials. He chaired several national committee's. He is a member of the editorial board of the *Journal of Thoracic and Cardiovascular Surgery*. Joe Woo became a full professor at the University of Pennsylvania in 2013. In 2014 he was recruited to Stanford as the Norman Shumway Professor and Chair of the Department of Cardiothoracic Surgery.

An exceptionally accomplished academic surgeon, Joe has more than 300 peer reviewed publications. He is a member of the Society of Thoracic Surgeons, Society of University Surgeons, Society of Clinical Surgery and the American Surgical Association. He has been the PhD thesis advisor for 4 candidates, has participated in more than 10 NIH study sections, is principal investigator on several NIH grants and has mentored over 50 research laboratory trainees. At Stanford he has had a spectacular career which is credited with increasing both clinical and research productivity and the reputation of the institution

It's a pleasure and honor for the Department to welcome Joe back home to HUP as our 2020 distinguished graduate.

Benjamin Chang Elected to Membership in the Academy of Master Clinicians

In 2019 eleven clinicians from Penn Medicine departments were elected to the Academy of Master Clinicians. From Surgery Ben Chang was honored.

The Academy of Master Clinicians was started in 2013 to recognize clinicians who exemplify the highest standards of clinical excellence, humanism and professionalism. Election to this Academy is the highest clinical honor to be bestowed on a Penn physician. Master Clinicians are known for developing and implementing innovative programs. They have focused on professionalism, career mentoring of medical students, promoting and enhancing a culture of clinical excellence, promoting wellness, reducing burnout and overcoming barriers to exceptional patient care.

Surgeon members elected to the Academy in previous years are Najjia Mahmoud, Pat Reilly, Ron Fairman, Tom Guzzo, Dahlia Sataloff, Stephen Kovach, Dan Dempsey and Wilson Szeto.

The Department is especially proud of Ben Chang. Ben is a graduate of Harvard College and Harvard Medical School. His residency in General Surgery, Plastic Surgery and Fellowship in Hand Surgery were obtained at NYU before he joined the Penn Faculty in 1995 as Assistant Professor of Surgery, Division of Plastic and Reconstructive Surgery. Ben was recruited by then Division Chief Linton Whitaker to establish a formal hand service. He has done this superbly well, building a large clinical and teaching program. Medical Students and residents in both plastic and orthopedic surgery have high praise for Ben as a teacher of this important service. Since 2008 he has been Associate Chief of the Division of Plastic and Reconstructive Surgery and since 2010 the Division's Residency Program Director. In 2018 he was promoted to Professor of Surgery.

He is a member of the American College of Surgeons, the American Society of Plastic Surgeons and the American Association of Hand Surgery. He is a senior examiner for the American Board of Plastic Surgery's Oral certification examination.

Since 2010 Ben has been co-director of the hand transplant program at HUP and CHOP. This program organized and headed by Scott Levin has now performed hand transplants in three adults and one child. Ben has played a crucial role in all of them. The first one performed in 2011 and all of these patients continue to do well.

In 2015 a unique transplant was performed, the first pediatric double hand transplant. The 8-year-old recipient Zion Harvey, has become famous through reports in national and international media. He had lost both hands and both lower legs from a severe episode of sepsis. He has done extremely well, recovering to the extent that he can catch and throw balls, dress and use the bathroom by himself. At the 4 year follow-up he was able to scale a rock climbing wall at CHOP. Fascinating research is exploring changes in the brain that resulted from the procedure and contribute to Zion's continuing rehabilitation.

Ben Chang richly deserves the honor of election to the Academy of Master Clinicians. He personifies the description above of members of the Academy of Master Clinicians.

Alumni News

Faculty, Residents, Alumni of Penn Surgery
email your news to Clyde Barker
clyde.barker@pennmedicine.upenn.edu

- **Ali Naji, MD, PhD** on March 5 received the *Excellence in Care Award* from The National Kidney Foundation (NKF), which is the largest, most comprehensive and long-standing organization dedicated to the awareness, prevention and treatment of kidney disease. "NKF Honors" is the National Kidney Foundation's awards reception held annually in celebration of World Kidney Day. The benefit honors members of the local community who have been out standing in the promotion of kidney health and the fight against kidney disease. For 37 years this event has typically been attended by 300 of the area's healthcare, business, and civic leaders.

- **Scott M. Damrauer's** publication on the genetics of VTE and PAD was placed on the American Heart Association's list of top heart disease and stroke research for 2019.

Scott was the senior author on this paper: *Genome-wide association study of peripheral artery disease in the Million Veteran Program. Nature Medicine* Vol. 25, August 2019 1274-1279.

Brief summary of findings: "We identified 18 novel genomic loci associated with risk of peripheral artery disease, explored the phenotypic consequences of risk variants, and identified four risk variants that appear to drive vascular disease in the peripheral vasculature, including the Factor V Leiden variant. These results demonstrate how large biobanks that couple genetic variation with dense electronic health record data can be leveraged for biological insights that can inform clinical care."

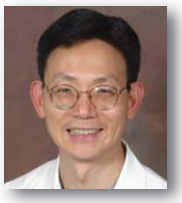
- **Ari D. Brooks, MD** has been elected President-Elect of the Philadelphia Academy of Surgery.

- **Ron DeMatteo, MD** was elected Treasurer of the Society of Surgical Oncology.

- **Julia Tchou, MD PhD, Ali Naji, MD PhD, and Brett Ecker, MD** (HUP chief resident) are recipients of the Penn Pearls Award.

Letters to the Editor

From Jack Yu,



I was a Chief Resident under you as the Chairman of the Department of Surgery at HUP 30 years ago. Over the last three decades, I have tried to continue the experiments which were started during the third year of my residency. As I near the end of my own surgical career, I want to thank you for being my mentor and role model-- you have instilled in me how an academic surgeon should conduct his or herself. Attached is the latest publication of our group. I find this whole area endlessly fascinating.

Jack's recent paper is titled: *Maternal milk ILCs and adaptive immune cells populate neonatal organs*, Jack C. Yu, et al. *Cellular & Molecular Immunology,* December 2019.

Excerpt of findings: "We provide here for the first time definitive evidence that maternal immune cells populate many neonatal organs across full MHC barriers through breast milk in a murine litter swap model. These mature immune cells survive the passage through the gastric environment and home with different addictives to neonatal organs."

From David Bartlett (HUP chief resident 1993)

Hi, I read your editorial on Bernie Fisher in the PSS news and enjoyed it very much. It was very accurate and in line with many conversations I had with Bernie. He always credited Ravdin as his most important mentor, and appreciated the serendipity with which he got involved in breast cancer research and the NSABP. I shared the piece with Bernie's family.

I hope all is well with you. I have taken a new position as the Cancer Institute Director of Allegheny Health Network here in Pittsburgh (starting in May). The new position provides a lot of autonomy and resources to build a unique program and continue my research. Bernie made the jump to Allegheny when Pitt turned its back on him. When I came to Pitt I worked with Tim Billiar and Art Levine to recruit him back to Pitt. So, I may be following in his footsteps.

Best Regards, Dave Bartlett, Bernard Fisher Professor of Surgery, UPMC, University of Pittsburgh, Director, David C. Koch Regional Perfusion Therapy Center.

Some how omitted from an earlier newsletter was that Dave Bartlett was elected President of the Society of Surgical Oncology in 2019. Belated congratulations, David!

Alumni News *(continued from page 8)*

From Matthew Finnegan. Matt is the son of James Finnegan (HUP chief resident 1972, deceased 2013)

Dear Dr. Barker,

I hope you are doing well. I'm writing to notify you of my change in position and new address. I have enjoyed reading the Penn Surgery Society News over the years since leaving Penn. I don't know if you remember but Bill Schwab introduced me to my wife, Katie Callaghan, at Penn. She worked on the original trauma team. Her father, Joseph was one of your first kidney transplants at Penn, over 40 years ago. I am happy to report that he is alive and well at 84.

I finished my training at Graduate, with Dr. Charles Wolferth and Dr. Paul Nemir in 1994. I have been Chief of General Surgery at Lourdes in Camden, now Virtua, after the recent takeover, and teaching surgical residents and medical students there for the last 12 years. I grew up loving the Jersey Shore and I am venturing back into private practice in Atlantic City. Fortunately, they are building a new GME program and the Dean at Rowan University has asked if I would help. I also need to get closer to my Mother, Loretta P. Finnegan, MD, who is finally retiring to Avalon, at age 83, and will need some assistance.

Thank you, Matthew J. Finnegan

Rachel Kelz Appointed William Maul Measey Professor of Surgery

Dr. DeMatteo provided this summary of Rachel Kelz's career.

Dr. Kelz graduated from Union College cum laude and Phi Beta Kappa. She received her medical degree from Yale, Cum Laude. During her HUP Surgery residency (1997-2004) she obtained a M.S. in Clinical Epidemiology at Penn. She was appointed Assistant Professor of Surgery in 2004 and now is a Professor on the CE track. She received an Executive MBA at the Wharton School in 2018.

Her clinical activity is focused on thyroid and parathyroid surgery. Her research is broad and covers education, surgical outcomes, quality and safety, and healthcare economics. She has published more than 185 peer reviewed manuscripts. She delivers approximately a dozen invited lectures per year. She was the PI on an R01 entitled *Using Patient Outcomes to Inform Surgical Education,* funded by the National Institute on Aging at the NIH, and has been a co-investigator on eight other R01 grants, several with her long-time collaborator Dr. Jeffrey Silber. Recently, she obtained another R01 entitled *Using Outcomes to Guide Treatment of Surgical Emergencies*. She has also been funded by the Measey Foundation, the Association of Program Directors in Surgery, and the Leonard Davis Institute.

Rachel founded a departmental Center for Surgery and Health Economics. She is also a Senior Scholar of the Leonard Davis Institute of Healthcare Economics at the Wharton School. She recently edited her first textbook, *Surgical Quality Improvement*. She has mentored many surgical trainees and students. She was awarded the Mentorship Award by the Department of Surgery. She is the Vice Chair for Clinical Research in Surgery.

Her commitment to education has been laudable. She was the Surgery Clerkship Director for 6 years and the Director of Undergraduate Medical Education for 7 years. During that time medical student evaluations of the Department's faculty members improved dramatically, to their highest-ever levels, including a number one ranking in 2008-09. She has been an Associate Program Director of the General Surgery residency. She received the Christian R. & Mary F. Lindback Distinguished Teaching Award, which is the highest teaching award bestowed by the Provost of the University of Pennsylvania. She serves as a faculty advisor to the Elizabeth Blackwell Society for Women in Medicine.

Dr. Kelz has held numerous national leadership roles. In the Association for Academic Surgery, she has been an Executive Council Member, Co-Chair of the Issues Committee, and Chair of the Senior Member Advisory Committee. In the American Association of Endocrine Surgeons, she has served as the Chair of the Program Committee and Vice Chair of the Education and

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Wall of Fame

Contributed by Daniel Dempsey

HUP CHIEF SURGICAL RESIDENTS 2010

While the HUP general surgery residency class of 2010 was busy doing their chief residency, Dr. Jeffrey Drebin was in his first year as chairman of surgery at Penn, having succeeded Dr. Larry Kaiser as the John Rhea Barton Professor. During this academic year 2010: the nation's second worse recession ended; Barack Obama completed his first year as president and won the Nobel Peace Prize and got Obamacare passed; Senator Ted Kennedy died; Serena Williams and Roger Federer won Wimbledon; Tom Watson almost won the British Open; American surgery lost Brad Aust, Phil Donahue, and Malcolm Perry; Haiti was hit by a devastating earthquake; the Saints won the Super Bowl; Sandra Bullock and Jeff Bridges won best acting Oscars; and the Yankees defeated the Phillies in the World Series 4 games to 2. There were eight HUP chief surgical residents graduating that year including 2 who joined the class as a result of the incorporation of the formerly free standing Pennsylvania Hospital (PAH) program into the HUP residency.

Aaron Stuart Blom matched at PAH and did his internship there in academic year 2005 before joining the HUP residency. Aaron was born in Philadelphia and went to college at Penn, graduating in 1997 with a major in "BBB", i.e. the biologic basis of behavior, also called psychology in some universities. His family had a very strong osteopathic heritage, and Aaron graduated from PCOM in 2004, but not before he got his MBA at St. Joe's in 2002. From 1996-2002 he worked as a research assistant in Penn Radiology and CT surgery. During that period, he was coauthor on over 70 papers, posters, and presentations; he was first author on 29. At a very young age he became a recognized expert in the field of cardiac MRI, and also became very interested in surgery. He was highly recommended for surgical residency by Mike Acker, Chuck Bridges, Vic Ferrari (cardiology) and Amy Goldberg from Temple where he was ranked very highly. He did a good job at HUP and when he finished in 2010, Aaron went back to Pennsylvania Hospital for vascular training.

Paul Joseph Foley, III was born in Lincoln, Nebraska. He came east for college at Villanova where he received a BS in chemistry in 1998. At Villanova, Paul was elected to Phi Beta Kappa. He then came to medical school at Penn, distinguishing himself as an outstanding clinical student. Paul was very highly recommended for surgical residency by Ernie Rosato, Doug Fraker, Larry Kaiser, and Alan Schuricht. Ironically he was interviewed for residency at Penn by Ron Fairman his future division chief, and John Kucharczuk his future colleague, both of whom rated him very highly. Paul must have ranked Columbia number one, because that is where he matched. But after two years in the categorical general surgery program there, Paul returned to Penn as a categorical PGY3. After the clinical PGY3 year at Penn, Paul went into Jeff Drebin's lab for 3 years, becoming REC chair toward the end of his lab sojourn. He then returned to clinical training, finishing general surgery in 2010. Paul stayed to do the vascular fellowship at Penn and then joined the staff at the Washington Hospital Center. A year and a half later, Paul returned to Penn as Assistant Professor of Surgery in the division of vascular surgery.

Dale Han came to HUP as an intern in 2003 and after he graduated the HUP general surgery residency in 2010 he did a surgical oncology fellowship at Moffitt in Tampa. Dale was born in New York and went to college at SUNY Stony Brook, graduating as valedictorian of his class in 1998 with a major in biochemistry. The then got his MD from Stony Brook in 2003. Needless to say he was elected to both Phi Beta Kappa and AOA. While at Penn, Dale spent 2 years in Doug Fraker's lab where he coauthored 20 papers/presentations/chapters. On 90% of these he was first author. Dale spent 3 years at Moffitt and then went to Yale as assistant professor of surgery. He is currently Associate Professor of Surgery in the division of surgical oncology at Ohio State, where he specializes in skin and soft tissue tumors.

Kristin Michelle Noonan was born in Highland Park Illinois and went to college at Northwestern where she majored in math and biochemistry. She graduated college in 1999 and entered medical school at University of Illinois Chicago, graduating AOA in 2003. That year she matched in general surgery at HUP. Kristin was initially interested in pediatric surgery and she was highly recommended by both Scott Adzick and Holly Hedrick for a competitive research spot in Patricia Donahue's lab at MGH. During her time in that research lab, Kristin coauthored 30 papers/presentations/abstracts and was awarded an American College of Surgeons Resident Research

Scholarship. As a resident at HUP Kristin did a great job. She was resident representative to the Residency Education Committee, and was also the HUP Resident Liaison to the American College of Surgeons. After training in general surgery at HUP, Kristin did a bariatric/minimally invasive surgery fellowship at Medical College of Wisconsin. She currently practices bariatric and general surgery at Abington Hospital just outside of Philadelphia.

Emily Carter Paulson matched at HUP in 2003 and graduated the general surgery program in 2010. Carter was born in Newport News, Virginia and went to college at UVA, graduating as a member of Phi Beta Kappa in 1999 with a BS in chemistry "with distinction". At Virginia she was an Echols Scholar and made the Dean's List every semester.

Carter then came to medical school at Penn, graduating AOA in 2003. While in medical school she rowed for Penn Med Crew, coauthored 2 papers with the Penn thoracic surgeons, was a representative to the curriculum committee, and won the I.S. Ravdin prize. Carter had outstanding letters of recommendation in support of her residency application from Ernie Rosato, Howard Ross, Bill Schwab, and Alan Schuricht. Instead of the traditional 2 years in the lab, during the 2 year break from routine clinical duties, Carter earned a Masters of Science in Clinical Epidemiology (MSCE) at Penn. Upon finishing general surgery training, Carter completed a colorectal fellowship at HUP and joined the Penn Surgery faculty. She is full time at the Philadelphia VA where she is chief of general surgery. Carter is also a senior fellow in the Leonard Davis Institute of Health Economics. Her hobbies include golf, running, and piano.

Paige Marie Porrett was born in Port Huron, Michigan. She graduated from Northwestern in 1997 with a B.A. in French, winning the prize for outstanding research thesis. Paige stayed at Northwestern for her MD, graduating medical school AOA in 2001 and winning the Conn Award as the outstanding clinical clerk. She had exceptionally strong letters of recommendation in support of her general surgery residency application from surgeon leaders at Northwestern: Dave Fullerton, chief of CT; Dick Bell, chairman of surgery; and Mark Talamonti, chief of surgical oncology. Lucky for us, Paige matched at HUP in 2001. She stretched her general surgery residency to 2010 by getting her Ph.D. in Jim Markmann's lab. In addition to distinguishing herself as an excellent surgeon and researcher during residency, Paige also excelled at teaching, winning one of the coveted Penn Pearls awards from the medical students. After finishing general surgery training in 2010, she stayed at HUP for fellowship training in transplantation and then joined the surgical faculty at Penn. Paige is surgical director of the living donor kidney transplant program and the uterus transplant program in the Penn Transplant Institute.

Robert Edward Roses came to HUP as a categorical surgery intern in 2003. Robert was born in New York City and went to college at Dartmouth where he majored in music, graduating with a B.A. in 1997. As a youth, Robert was an accomplished Jazz musician with considerable proficiency on the trumpet as well as the piano and drums. For a while he considered a career as a professional musician. Fortunately for us and his patients however, Robert abandoned that fantasy and enrolled in the post baccalaureate program at Wellesley. He then entered Tufts medical school, graduating AOA in 2003. Supporting his application for general surgery residency he had outstanding letters of recommendation from Dr O'Donnell at Lahey Clinic and from Dr Mackey, chairman of surgery at Tufts. While at HUP as a resident, Robert had a very productive lab experience in Brian Czerniecki's lab, also serving as REC chair. Upon completion of HUP general surgery training, Robert completed surgical oncology training at M.D. Anderson in Houston. Following fellowship, he returned to Penn, joining the surgical faculty in the Division of Surgical Oncology. He specializes in GI cancer, neuroendocrine tumors, and HPB surgery.

Nyali Elizabeth Taylor grew up in New Jersey and went to college at Rutgers graduating in 1998 with a major in biology and a minor in English. During college Nyali was named to the Big East Academic All Star Team in track and field. After college, she earned an MPH at Hahnemann and her MD from Drexel in 2003. Drexel had taken over MCP Hahnemann School of Medicine in 2002. Nyali had excellent letters of recommendation for residency from Barry Mann, Rick Shannon (then chairman of medicine at Allegheny General Hospital) and Scott McDougal (chief of urology at MGH). Following medical school Nyali came to Pennsylvania Hospital where she did her internship, subsequently joining the HUP residency and graduating as chief resident in 2010. Nyali then completed vascular fellowship at Cooper in Camden New Jersey and subsequently went into practice in the Philadelphia region.

Penn Surgery

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Rachel Kelz *(continued from page 9)*

Research Committee. For the Society of University Surgeons, she has served on the Executive Council, Publication Committee, and Membership Committee. For the Society of Clinical Surgery, she serves as the Secretary. She is on the Editorial Board of the *Journal of the American College of Surgeons* and is a Section Editor for Surgery. In addition, she is an American Board of Surgery Associate Examiner for the General Surgery and Complex General Surgical Oncology exams. She is the Surgeon Champion for NSQIP at Penn, and the inaugural Director of the NSQIP Quality In-Training Initiative.

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