THE UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE PHOENIX

IN THIS ISSUE:

General Surgery

THE SPECIALTY REPORT

From the Chair: Steven B. Johnson, MD

Steven B. Johnson MD, FACS, FCCM serves as the chair for the UA College of Medicine – Phoenix Department of Surgery, as well as the program director for UA College of Medicine – Phoenix Surgical Residency Program. He received his medical degree from University of Virginia College of Medicine, Charlottesville and completed residency training at University of Rochester, New York. He previously served as a Professor of Surgery, and Chief of the Division of Critical Care at the R. Adams Cowley Shock Trauma Center and the Department of Surgery at University of Maryland School, and program director for the Trauma and Critical Care Fellowship Program at University of Maryland.

What drew you to Surgery as a specialty? Surgery became an interest of mine during medical school though I didn't decide until my 3rd year. For me, the decision was based on the combination of the cognitive and technical aspects of surgery and the opportunity to visualize the wonderful results of what surgeons do. However, as surgeons, it is not just about the technical or cognitive aspects, but rather about providing the complete package of care. This means you must be able to juggle the medical side of diagnosis, manage the operating room, and provide the post-operative care of all types of patients. In addition, surgeons have a certain aspect that is not shared by any other specialty and this involves the immense trust our patients and society bestow on us. It is an honor to be given the privilege to operate on somebody, and there is something very special about that. That is why I love what I do. I have fun taking care of some of the sickest patients as a trauma critical care surgeon.

Where did you attend medical school and residency? I attended the University of Virginia School of Medicine in Charlottesville and completed my entire surgical training at University of Rochester in Rochester, New York. My residency training evolved from general surgery to specializing in trauma critical care while still being a general surgeon. This has been the most satisfying career I can imagine. I look forward to the future.

Did you complete a separate fellowship training in trauma Critical Care? When I trained, there was not a formal trauma critical care fellowship. I spent a year on faculty at Rochester doing trauma critical care which began my career in trauma critical care.

How has the field changed throughout your career and how do you anticipate it changing? Education of residents and fellows has evolved to become more structured and more geared towards education and learning. I trained in the era where every other night call meant you were missing half the material and 120-hour work weeks were routine. However, in-patient health care was also different because patients weren't as sick in the hospital and we could admit patients the night before for an elective gall bladder repair. Therefore, I think the education has changed because the patient population has changed. Technology, such as laparoscopic surgery is a beautiful example of how technology has influenced and led to the evolution of surgery. My most common surgery when I was a resident was an open cholecystectomy. Two years after completing residency, laparoscopic cholecystectomy was introduced, and now about 99% of all gallbladders are removed laparoscopically.

What are some changes you foresee in the future of surgery? I think the field of surgery is progressing to an era where imaging technologies will be combined with augmented virtual realities to allow better surgical care for patients. There will be greater integration with computers and augmented reality in the care of patients. I think there will be tremendous potential for the world of virtual reality in medicine, specifically in relation to preparing for a case. In addition, medicine will become much more personalized and we will have a deeper understanding about the interplay of genetics and the appropriate surgical procedures as well as surgical outcomes for each individual.

"... care for your patient like you would want a surgeon to take care of one of your family members. It sounds so simple, but sometimes it gets lost."

What are you looking for in the next generation of surgeons? I am a simple person. I want you to care for your patient like you would want a surgeon to take care of one of your family members. It sounds so simple but sometimes it gets lost. If you provide that level of care it dictates the cognitive, technical, empathy, and compassion that you will show towards your patient. Surgeons who care about their patients and what happens to them strive to be the best possible surgeons for them. These are the surgeons who are the best and get the most out of our specialty. So I am looking for students and future surgeons who devote themselves to taking care of their surgical patients with the same standard of care they would provide to their loved ones. They have fun giving high level care.

What are your responsibilities as the BUMCP Department Chair? I am the department chair and also the program director of our residency program. I have responsibilities to my faculty and to my residents. Our vision as an institution is to create the first academic medical center in the 5th largest city in the country; facilitating this vision is what I view as my role. As such, we are building a research infrastructure and we are creating a clinical enterprise by bringing in faculty with specific expertise. My responsibility is creating an environment that is conducive to clinicians and providers who are excellent at taking care of their patients, but also capable of bringing in research opportunities. My goal is to create an academic world that is unique and different from old school models like in Virginia and Rochester. I would like to create something exciting and transformative. We are very committed as a department to training residents and medical students, and this is why we don't have any fellowship programs. I want my residents' education to be a priority in the difficult and challenging cases. Overall, I view my role as creating an environment that is conducive to building an academic department that will be transformative in the future.

Do you feel that research experience is important when choosing Surgery residents? Residencies across the country have different expectations. Some surgery residency programs place a heavy emphasis on research and publications while others focus on the individual with emphasis on gold humanism awards, service to underserved communities, and similar qualities. It is important to know yourself, what makes you happy, and what is of interest to you in order to determine your best fit/best friend. It is also important to know that your interests will influence where you attend residency. I encourage our residents to do research in the program, but don't require them to do research. My goal as program director is to encourage residents to pursue research because it keeps them engaged in expanding their knowledge, stimulates discovery, and leads to continuous growth. It is how we find ways to take better care of our patients.

"It is important to know yourself, what makes you happy, and what is of interest to you in order to determine your best fit."

What is your favorite part about being a surgeon? What is your favorite part about working in academic medicine? I have always worked at an academic medical center and in a university hospital. I left University of Rochester to practice at University of Arizona in Tucson for 7 years. Later, I followed my chair from Tucson to the University of Maryland and then became chair at University of Arizona in Phoenix.

Being a surgeon is fun, it provides career achievement and personal satisfaction. I enjoy coming to work. I love taking care of patients and making a difference in their lives. From the academic standpoint, I love pushing the "envelope" and learning how to do things better. Banner University Medical Center – Phoenix is creating the foundation for the future. This will allow us to push the envelope in other ways.

What do you do to balance your professional life and personal life? Its important to know what's important to you and make sure that you remain true to it. My family is important and I made sure to make them a priority. I made sure I knew what was important to my two children and that I was there for what was important. The quality of time and activities is more important that the quantity. Also be open to sharing your professional life with the people you care about; it helps them understand better. I also enjoy growing roses, hibiscus, and collecting wine, all things I can and have shared with family and friends.

— Agnes Ewongwo, MS2

Clerkship Director: Natasha Keric, MD

Dr. Natasha Keric is the Clerkship Director for Surgery at the University of Arizona College of Medicine-Phoenix and a Trauma Surgeon at Banner-University Medical Center. She graduated from the University of Illinois-College of Medicine before completing her Surgical Residency at Scott and White. Dr. Keric then completed a fellowship in Trauma and Critical Care at the University of Maryland Shock Trauma Center in Baltimore.

Can you tell me about your path to surgery? What drew you to surgery as a specialty while in medical school? My path to surgery was not a straightforward path. I originally wanted to do Emergency Medicine because towards the end of my third year, I liked everything (cardiology, gynecology, family medicine) and I liked the fast-paced nature of the field. My surgery rotation was my last rotation of third year, and it really brought everything together for me. It added the missing pieces of being in the operating room and being able to take care of patients with a surgical disease, which fascinated me. A patient could come to us with a horrible infection, get surgically debrided, and then get better the next day. My experiences during this rotation led me to change paths and pursue a career in the surgical field.

What is your favorite part about Surgery and Trauma & Critical Care? I love that I never have to ask my patients about their health insurance. We take care of anyone that comes through our doors, and it is the rawest, purest form of caring for someone. Patients are super sick and have life-threatening issues, and we treat them without any restrictions. Being a physician can be very stressful nowadays with pressures about productivity, outcomes and patient satisfaction, and I love being able to just focus on saving someone's life and improving their outcome.

What led you to the UA-College of Medicine Phoenix and Banner University Medical Center? I have always enjoyed teaching and group education. My first job led me to Banner University Medical Center as the Associate Clerkship director. At the time, we had a new curriculum starting so everything seemed very new with a lot of wiggle room to think outside of the box and create a new program, which was really exciting for me. Now that I have transitioned into the role of Clerkship Director, I work with a team of faculty to continuously grow and improve what we do for our students. Our focus is to give a solid educational experience in general surgery with a broad range of surgical specialties, so that students have more options to explore different fields. We also hope to expand our rural health sites so that more students can experience general surgery rotations in elective rural areas.

What is your favorite part about working in academic medicine? It really keeps you on your toes! You have to stay on top of your game and be open to new ideas. Residents and students are naturally intellectually curious, and can be smarter and brighter than you, which in the end keeps you honest and humble. It charges me to continue to read and stay current so that I do not fall behind. I love working and learning as a team. It allows everyone to have a voice and we learn from each other. What is also really special about academic medicine is seeing the students and residents mature into clinicians and attendings. I enjoy watching them have an "ah-ha moment" and taking ownership of their patients. I have had many students and residents that I have trained reach out to me after they have graduated and share stories of where they are now, say thanks and how they now "get it". That is the best part of my job.

Did you have a mentor as a medical student or resident? Yes, during medical school, my mentor was one of the chief surgical residents with whom I spent my first rotation on Surgery as a third year student. She was the first resident that I worked with and she encouraged me to become a surgeon. I wanted to become like her – she was super smart, very tough, led the team flawlessly, took charge of her patients and even had the attendings listening to her. My mentor in residency helped me realize that Trauma and Critical Care was the career path for me. I was a 2nd year resident, and he took me under his wing. He was a great mentor, friend and leader and I still can hear his words of wisdom in my head. Unfortunately, I lost his presence too soon, as he passed two years ago from a mountaineering accident. His spirit lives on in my passion for mentoring others.

What is the most challenging part about Surgery, and how is it being addressed or overcome? The hardest part about surgery is the emotional impact that it has on the physician, especially in trauma, which has a high burnout rate. The bond between the Surgeon and her patient is very unique. My mentor once told me, "Operating on someone allows you to touch their soul". It is one of the most rewarding parts of your day when your patient does well, but it also one of the toughest things that can happen to you when they don't. As I tell students starting the Surgery clerkship; this might be the first time you see someone die in front of you and, as difficult as it is, being able to deal with death and a bad outcome are crucial aspects of clinical learning and training. The second toughest thing about being a surgeon is breaking down preconceived notions that we are 'technicians, unemotional and mean'. This could be furthest from the truth because surgeons are some of the most passionate people that I have ever worked with. In order to be leaders and take care of our patients, we have evolved coping mechanisms that at times make us appear to be cold. People need to consider this: on a busy call night, I might have someone die in front of me, but I cannot let it affect me because I have three more patients that need my focus and skill. It doesn't make me care any less, it is only a snapshot in time. Many do not see how we combat these struggles, but that is one of the main reasons why I love what I do. We debrief, we share stories, and we lean on each other for support, which allows us to keep moving forward.

"Operating on someone allows you to touch their soul."

What are you looking for in the next generation of surgeons? I'm looking for people who will be smart, innovative, and who will think outside of the box. More importantly, they will never lose sight of why we are here in medicine, which is to take good care of our patients.

Is research experience an important factor when choosing surgery residents? Do many surgery residents choose to continue research? Research is important, it's how we push forward. We study things that will help us take care of patients & bring new, exciting things to medicine. I think it is good for everyone to experience research, but I don't think it necessarily needs to be the crux of what they do. It is good practice to be clinically curious, whether studying clinical outcomes or thinking critically about patients in a different way.

"Research is important, it's how we push forward."

What is your favorite activity to do in Phoenix? Favorite restaurant or coffee shop? I am very social at work, but outside of work, I am a little bit of a hermit. I love to cook and stay home. I do a lot of Pilates and outdoor activities like hiking and biking now that the weather is nice. Most of my free time involves time with my husband and our two pugs. I have recently taken up meditation, which has been a lot more challenging than I thought. I never realized how loud it is inside my head.

What do you do to balance your professional and personal life? It is a daily challenge to balance my professional and personal life. I usually work 2 clinical weeks each month – Monday-Sunday from 7am-5pm, but the hours may vary. During one of those weeks, we have a 24-hr call. The other 2 weeks of the month are dedicated to administration and running the Surgery Clerkship at the College of Medicine. The hardest thing is being able to say 'No' when your work day is done or you need a break.

Do you have any recommendations for third years entering rotations? Everybody is focused on how they can honor or get the most points, but the main goal is to be a good doctor. The way to stand out is to take ownership – think about your patients as one of your family members. If you do that, everything else will fall into place because if you really care about that patient, then you will make sure you do a good physical exam, you will be kind, you will check the labs and you will gather their information so that you can put it into the context of how it affects your decision to care for them. Nobody can force you to go home and read about your patients' cases, but if you care enough about them, then you will take ownership to do everything that you can for them. It doesn't matter if you are an outspoken or a quiet student, it matters what you bring to the table and the effort that you put into learning the most that you can about taking care of your patient as if there was nobody else there.

Can you share your perspective on being a woman in the field of surgery -- whether you felt any additional challenges or how it affected plans to start a family? This is a difficult question to answer. I do not believe nor have I ever felt that I was treated differently because I was a woman in the field of surgery. I was judged on clinical decision making, technique and compassion just like everyone else. I never really thought about my gender when trying to accomplish anything, I just tried to be the best I could be, and it has worked well for me so far. My decision to not start a family had nothing to do with the pressures in the field that I work in but perhaps more personal, as I just wasn't ready yet. That being said, I do recognize and appreciate the challenges faced by surgeons, both men and women, who decide to start a family. Their challenges are perhaps not unique to only the surgical field and involve balancing work and life and making sacrifices and choices that at times are very hard to do. We all make choices, regardless of where we all are in our timeline, and one of the more important ones we can make, is to be a supportive partner, without bias and without retribution. Only together will we be stronger.

— Sarah Loh, MS2

Associate Surgical Clerkship Director: Ara Feinstein, MD, MPH

Ara Feinstein, M.D., M.P.H. is a Critical Care/Trauma Surgeon in Phoenix, Arizona. He is the Associate Surgical Clerkship Director and Associate Professor of Surgery at the University of Arizona College of Medicine, Phoenix. He received his medical degree from Yale University School of Medicine in New Haven, Connecticut, and completed his General Surgery residency at Massachusetts General Hospital in affiliation with Harvard Medical School. Dr. Feinstein completed his Trauma/Critical Care fellowship at the University of Miami, Miller School of Medicine. He is board certified in both General Surgery and Surgical Critical Care.

Can you share your path to choosing your specialty or anything in particular that drew you to surgery? I grew up in Tempe, AZ, and my dad was a General Surgeon in the East Valley, so I have had exposure to surgery my whole life. I remember as a kid rounding with my dad, so I think I have always sort of thought surgery would be my path. I think as I got older I had experiences with friends and family who had traumatic events that skewed me towards trauma surgery. I was one of those strange people that even in the first year of medical school knew their career path; I knew I wanted to be a trauma and critical care surgeon pretty early on. I started medical school in 1995 and I didn't actually become an attending trauma surgeon until 2009. Knowing what I wanted to do so early on is basically analogous to a first grader knowing exactly what they want to do when they get to college. I always tell medical students to not shy away from that idea if they know what they want to do early on. To be honest I loved all my rotations, but I knew that I wanted to pursue trauma surgery from the very beginning. And this is just as ok as not knowing what you want to do.

What is your favorite part about being a trauma surgeon or favorite part about academic medicine? My favorite part of being a trauma surgeon is that when I come to work I never know what I'm going to get. No two cases are alike. It is that feeling of excitement that there is somebody who is really sick and I am there to help that person. That is never boring. The best part about academic medicine is teaching. I always had so much appreciation for the people that taught me and thought it would be really cool to do the same. My dad was a surgeon and mother was a teacher, so I guess I fell somewhere in between. As a physician, you spend so much time and energy acquiring all of this knowledge in order to take care of people. To me it would be a shame to not pass it along; if I learned all of this information and took care of people and just retired it would seem like a waste to me. I enjoy that interaction with students and residents and watching someone grow over time. For example, there is a huge satisfaction in having a hand in someone's career development. If I had someone as a medical student, then as a resident, and then watched them graduate and become a surgeon, there is a huge satisfaction in seeing someone realize their career goals. It is a lot of fun.

What are your responsibilities as Associate Surgical Clerkship Director? I was the Surgery Clerkship Director from 2009-2014. Right now, I play a supportive role to the current Clerkship Director, Dr. Natasha Keric, serving as institutional memory about how we got to where we are and playing a sort of mentorship position for the role. I think medical students and clerkship programs are changing so much that it pushes us to adapt beyond the traditional ways of teaching surgery. Generally, when you think about surgery, it doesn't change that much, but I think students are changing much more rapidly in the way they learn and how they want to learn. This is changing more rapidly than the surgical field itself. For us and our roles, it is more about focusing on what we teach and how we teach medical students during the surgical clerkship.

Any advice for students on their surgery rotations, any tips for success or qualities that you think are important for a medical student to have as member of the surgical team — ? The easy answer is 'be a part of the team'. Figuring out to how to be part of the team is the actual hard part for medical students. It's very busy. There is an intensity to surgery that the attendings are used to at this point, but for students it can be a little bit shocking-the work and patient interactions itself. Instead of seeing someone in a primary care setting for long periods of time on multiple visits, in trauma surgery I meet somebody and within a few seconds of meeting them I might be making a life or death medical decision about them. There is definitely an intensity to it that catches students off guard initially and I think it takes a little getting used to. Students usually find their way, eventually figuring out how the team works and how to contribute, and that's when it starts to become fun for students. There is an observation period for sure.

What are some important residency program factors that med students should take note of when on the interview trail? I think there are categories that you can break up broadly: community or academic medicine, research or no research, fellowships or completing General Surgery residency and going into practice. Look at the pattern of residents and see if that fits the career you want and who you want to be. I always give people the advice to not think they are going to be the exception. Don't go somewhere and think, "well everyone does something this way, but I am going to do it that way", because it really doesn't work like that. You are most likely to become the type of future surgeon that a particular program produces. This goes for attitude as well. If you go interview at a program and all the residents are miserable, odds are you will end up feeling miserable too. Likewise, if you see happy, well-adjusted, and rested residents, that will likely be you if you choose that program.

Surgery Interest Group (SIG):

Current Student Leadership:

Bryce Munter, Class of 2021
brycemunter@email.arizona.edu

Kylie Jenkins, Class of 2021
kyliejenkins@email.arizona.edu

Parth Patel, Class of 2021
parthpatel@email.arizona.edu

Ryan Farhat, Class of 2021
rmf2@email.arizona.edu

Faculty Advisor:

Dr. Ara Feinstein, MD, MPH

Associated Surgical Clerkship Director, Associated Professor of Surgery at University of Arizona College of Medicine, Phoenix

Mission Statement:

The mission of the Surgery Interest Group (SIG) is to promote student exposure to and participation in the multifaceted field of general surgery and surgical subspecialties. In order to accomplish this mission, SIG plans a variety of experiences throughout the year including, but not limited to: lunch presentations by physicians in various surgical sub-specialties, shadowing opportunities during surgeries and grand rounds, and suture and knot-tying clinics to prepare students for surgical rotations during the third year. In addition to being the largest student group on campus, SIG also serves as the primary link between the student body and the SIM Center on the 4th floor of HSEB. Furthermore SIG sponsors educational workshops using state-of-the-art simulation equipment to prepare students for surgical rotations.

Associated Website:

https://www.facs.org/education/resources/medical-students/sigs

Any myths about surgery that you would like to dispel? I think the myth that surgeons are not kind to each other or to our colleagues. I think that in 2017 it's as important to us to be respectful to each other and our colleagues as it is in any other field of medicine, or really any workplace. I think that we still suffer from the old stereotype of surgeons throwing instruments or tantrums in the operating room. That behavior is no more tolerated in Surgery than it is anywhere else; it just really doesn't happen anymore. It should definitely be relegated to the past. I also sort of get offended when people say surgeons don't have lives outside of the operating room. I'm not a workaholic. I have two young kids at home and I take them to school and participate in their school activities, I have date night every Saturday with my wife (unless I'm on call). I have hobbies, I go to concerts. There is latitude in surgery to be the person you want to be.

"For those students who haven't chosen a field or don't have a good idea of what they want to do, I say consider surgery."

Anything else you would like to share? For those students who haven't chosen a field or don't have a good idea of what they want to do, I say consider surgery. I see people all the time saying they would never think they would go into Surgery. I think it is one of those things if you do it and you like it, it will be a great life, career, and a lot of fun. There is a reason that there are 10-20 times more applicants than spots in Surgery, there is something about it that is special. Alternatively, even If you don't want to be a surgeon, just pretend for your clerkship. Because if you throw yourself into Surgery as if this is what you want to do for the rest of your life, it will make you a better doctor regardless. If you dedicate yourself to the clerkship, work hard, be part of the team, you will be a better doctor after having completed the Surgery clerkship.

— Sarah Patel, MS2

Chief of General Surgery: Ross Goldberg, MD

Dr. Ross Goldberg serves as the Chief of General Surgery at Maricopa Integrated Health System. He received his Medical Degree from New York Medical College. He completed his PGY-1 to PGY-3 at St. Vincent Medical Catholic Center in New York City and his PGY-4 to PGY-5 at Thomas Jefferson University Hospital in Philadelphia. After his residency, Dr. Goldberg completed a fellowship in minimally invasive surgery at Mayo Clinic in Florida

What drew you to medicine and general surgery in specific? I always knew that I wanted to go into medicine but my first exposure to surgery was in college when I shadowed my friend's father who was completing a liver transplant at Emory Hospital. I was able to observe a liver harvest and I knew from that moment that I wanted to do surgery, so when I started medical school I went in with that mindset. During the summer of my first and second year at New York Medical College, I worked at a burn center with various plastic surgeons. I knew that if could handle the burns we encountered on a daily basis, I could also handle the difficulties associated with surgery. Subsequently, when I started my clinical years, my first rotation was in Internal Medicine which made me think of interventional cardiology as a potential career. However, during my second day of my surgery rotation, I switched back to my initial desire of wanting to go into surgery. My decision was definitely influenced by the fact that the field of general surgery is very goal oriented, so I like being able to fix a patient's problem before moving on to a next case.

What traits do you believe contributed to your overall success? I think everybody finds their way of being successful in their chosen profession. For me, I believe that it was my enthusiasm for the field that allowed me to stand out in comparison to many other medical students. Personally, I was always engaged during my clinical rotations in medical school. I had the internal drive of wanting to do better that helped me be successful. Everyone finds their own individual strengths which for me was my ability to interact well with people as well as my willingness to learn and take feedback. However, I think that it's more important to recognize your weaknesses and improve on those if you want to be successful throughout your career. For instance, written exams were always my weakness, so I had to improve on that aspect of my education by continuing to accept guidance from my colleagues and translating that advice into actions. In order to further succeed in residency, you need to earn peoples' trust—not only the trust

of patients—but also the trust of those teaching. My chief once told me: "If I can trust someone on the floor, I can trust them in the operating room." I've adopted the same mentality in the way I interact with my residents. If I can trust that they take great care of my patients while they're being admitted and prepared for surgery, I can trust that this will translate into the operating room when the patient is in a state in which they cannot defend themselves.

Pearls of Wisdom for Medical Students in Upcoming Clinical Rotations:

Dr. Natasha Keric:

The way to stand out is to take ownership.

It doesn't matter if you are outspoken or quiet; it matters the effort you put into learning.

Be kind.

Dr. Ara Feinstein:

There is an intensity to surgery.

There is an observation period.

Be a part of the team.

Dr. Ross Goldberg:

Self motivation cannot be taught.

Put in the time to learn.

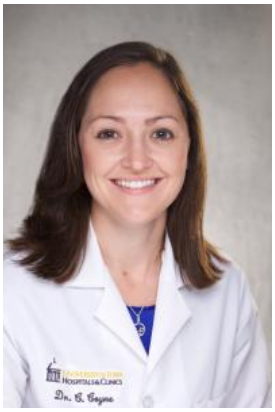
Care. Engage.

Take a step beyond just regurgitating information.

What recommendations do you have for current/future third-year medical students to succeed in their rotations? I know that the general surgery rotation at MIHS has a reputation for being incredibly difficult and surgeons themselves are also very tough graders. I keep telling medical students that I cannot teach self-motivation, so if they come wanting to learn—even if they know nothing—I can help them get the knowledge they need to succeed. Now, this only works if they are willing to put in the time to learn. If they come with the expectation that information will be spoon-fed to them without caring or engaging, that's what often works against them being successful. As an example, we have pre-op conferences every Thursday where we discuss upcoming cases for the next week and medical students are presenting most of these cases. Usually, this presentation includes aspects such as the patient's present illness, image findings, and treatment plan. During those presentations, what I look for is whether they are taking a step beyond just regurgitating the patient's chart and reading up on the patient's illness. I don't look for someone to give me a perfect presentation, but I do notice when someone takes that extra step in knowing the patient better than anyone else. Usually, the medical students have the least numbers of patients to follow which also means they should be taking the time to know them better than anyone else on the team.

How do you believe the field of General Surgery will change in the future? General Surgeons used to do everything, ranging from endoscopies to OB/GYN related operations. I've seen this evolve throughout my career and nowadays most general surgeons are incredibly specialized. I think the field will keep evolving and the discussion now is whether a five-year general surgery residency is too long considering that most surgeons will specialize as part of their fellowship. Also, there have been discussions on how to train general surgeons for both minimally invasive surgeries as well as open surgeries. This is currently a big issue since most surgeries are moving away from open operations in favor of laparoscopic procedures. For instance, most of my residents have not completed any open appendectomies or cholecystectomies since those procedures are all laparoscopically performed. However, some might eventually run into a situation in which completing an open surgery is necessary, so that is part of their training that cannot be neglected. Overall, the good thing about general surgery is that even in the distant future my job will be relatively secure. I view technology as a great enhancement, but I don't think it will make surgeons obsolete in the near future considering that every patient's anatomy is different. I do think surgical simulations will continue evolving in complexity which will make it easier for us to prepare for an upcoming operation and to train future surgeons. However, even those simulations are never a hundred-percent representative of the patient's anatomy and you have to be ready to adapt for surprises in the OR.

— Rand Hanna, MS1



Alumni Interview: Catherine Coyne, MD

Catherine Coyne is a first year resident in general surgery at the University of Iowa and is an alumna of the University of Arizona College of Medicine – Phoenix.

What led you to pursue surgery over other specialties?
There was one defining moment during the beginning of my third year of medical school when I did my surgery rotation. I was in the operating room and I was scrubbed in with one of the attending physicians on a colorectal surgery service case. There was bowel that was peristalsing in front of my face and I said to myself "this is so cool!". The attending looked at me, I didn't realize I said it out loud. He replied "it is cool, isn't it? This is why I got into surgery!". It was a series of those specific moments that lead me to realize I really wanted to do surgery.

When you were considering surgery as a specialty, did you have any concerns or anything you were unsure about? Surgery is known for having longer hours, but I found out any residency you pursue is going to be long and grueling. It just depends on the kind of long and grueling hours you are looking for, whether it be clinic hours or being on your feet all day. In surgery, you just happen to be in the operating room a lot – and I like that!

What is your most favorite thing about surgery or one of the things you enjoy the most? I would say the best thing about surgery is that every day is different. You can never expect one day to be like the next. I like that openness and I like having to think on your feet and figure out what your day is going to be like. You just roll with the punches!

What advice do you have for medical students when it comes to choosing a specialty? A lot of people pick a specialty because they think it is what they *should* do, but my biggest piece of advice is to pick what you *want* to do – it is the rest of your life, not just the next 3-5 years. The specialty you choose is what you are going to be committed to and you have to have a passion for it. I like to ask people what they are interested in, whether is it the clinical aspect or procedural aspect they enjoy more. From that broad base, you can begin to make decisions. Ultimately, you find what you like and the people you clique with and it will be enjoyable going to work. Early on in medical school, if you have no idea what you want to do, then you are in a great spot! From this position, you are able to pick up on different things from different people. Ultimately, you figure out what you like. Sometimes you can't explain what that is, it's just something you enjoy and feel like you could do for the rest of your life.

*"A lot of people pick a specialty because they think it is what they should do, but my advice is to pick what you **want** to do — it is the rest of your life, not just the next three to five years."*

Complete this sentence: something people don't know about me is... I have a ridiculous shoe collection that includes a ton of tennis and dress shoes. My boyfriend can't even fit his shoes in our closet because I have too many!

— Andrea Fernandez, MS1

Fourth-Year Perspective: Raafat Kuk, Class of 2018

Raafat Kuk, who goes by John, is a fourth year medical student who is in the midst of interviewing for General Surgery Residency.

What drew you to the field of General Surgery? I had always been drawn to procedural medicine, but I wanted to keep an open mind while going through rotations. I loved every specialty during third year, but when I did my Surgery rotation, I realized that it was the perfect fit for me. In the operating room, the experience was very hands on; out of the operating room, I could manage patients' conditions pre- and post-surgically.

How did you confirm that General Surgery was the specialty you wanted to pursue? I really wanted to make sure that this was the field that was right for me. During my third year Surgery clerkship, I did Transplant/ Hepato-pancreato-biliary (HPB) Surgery and Trauma Surgery (four weeks each), and then I spent my subspecialty month exploring Plastics and Orthopedic Surgery. During fourth year, I exposed myself to General Surgery, Trauma Surgery, Trauma ICU, and Transplant/HPB at MIHS, Banner, UCSF, and Mayo-Rochester, respectively. I explored each one and found fantastic mentors during those rotations, but General Surgery was the field that I loved the most.

Can you walk me through the general process of applying to a General Surgery Residency? After taking the USMLE Step 1, you go into the "real world" and start third year rotations. You will have the opportunity to apply for away rotations via VSAS [Visiting Student Application Service] to gain a bigger picture of the field, especially because there are different cultures between different geographical areas. I applied to five away rotations and attended two. At the end of third year, you'll take the USMLE Step 2. In fourth year, you'll gather your scores, letters of recommendation, and personal statement to apply to residency via ERAS [Electronic Residency Application Service]. Schools will either offer you an interview, be silent, place you on a waitlist, or send you a rejection. I think it's easier than applying to medical school, but more expensive.

What are some important pieces of advice or parting thoughts for current medical students who are interested in General Surgery? While going through third year rotations, always -- *always* -- keep an open mind. Be genuine, speak up and ask to see more or do more, make connections, and make sure you love the field before committing. Do not take things personally; there will be tough situations, but focus on learning as much as possible and don't take the parts you don't love personally. Oh, and learn Biostatistics -- it's important for Step 1.

Specialty Newsletter Editors: Agnes Ewongwo, Andrea Fernandez, Rand Hanna, Sarah Loh, Sarah Patel, Maggie Xiong, Chase Fitzgerald, Megan Kelly, Jaimei Zhang
Faculty Advisor: Dr. Lisa Shah-Patel, MD
If you have any suggestions for how we could enhance the newsletter or any corrections, comments, or suggestions for articles of interest, please do not hesitate to contact us at lshahpatel@email.arizona.edu and comphx-specialtyinfo@email.arizona.edu

STATS TO KNOW

General Surgery Match Summary, 2017

No. of Programs	Positions Offered	Unfilled Programs	No. of Applicants	No. of Matches US Seniors : Total	% Filled US Seniors : Total	Ranked Positions US Seniors : Total
267	1,281	3	2,388	1,005 : 1,276	78.5 : 99.6	14,840 : 18,323

Summary Statistics on US Allopathic Seniors, 2016

Measure	Matched (n=1,254)	Unmatched (n=59)
Mean number contiguous ranks	12.9	6.5
Mean number distinct specialties ranked	1.0	1.1
Mean USMLE Step 1 score	235	218
Mean USMLE Step 2 score	247	231
Mean number of research experiences	3.2	2.7
Mean number of abstracts, presentations, and publications	4.7	3.3
Mean number of work experiences	3.3	3.1
Mean number of volunteer experiences	6.8	5.9
Percentage who are AOA members	17.4	1.3
Percentage who graduated from one of the 40 US medical schools with the highest NIH funding	29.5	18.8
Percentage who have a Ph.D degree	1.5	3.0
Percentage who have another graduate degree	17.9	18.7