

Prof. Barbara L. Bass: what surgeons do is full of great joy and privilege!

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Editor's note

Recent years have seen a fast track of growth in surgical skills and techniques across the broad medical disciplines. This is tailed after by the repeatedly highlighted and renewed concepts such as minimally invasive surgery, medical artificial intelligence, precision medicine and multidisciplinary team. With an aim to exchange the vast knowledge across borders and expedite studies in cutting-edge surgical practices, the American College of Surgeons (ACS) Clinical Congress was held in Boston, MA, on October 21–25, 2018. Bringing together multi-disciplined surgeons, surgery residents, medical students and members of surgical teams from all over the world, the Congress sparked a whole bunch of ideas that is believed to benefit more patients worldwide.

As implied by the theme “Joy and Privilege of a Surgical Career”, one of the key purposes of this Congress is to address critical education and training needs, and equip surgeons with skills to achieve the best outcomes in the ever-changing environment of health care. Taking this precious opportunity, the *Journal of Visualized Surgery* (JOVS) is pleased to interview Prof. Barbara L. Bass, the President of the ACS, who will share with us her special bonding with ACS, her role as the ACS President, the challenging and rewarding aspects of being the President, some latest research she is working on, and the surgical training system of her center (Figure 1).

Expert introduction

Barbara L. Bass, MD, FACS, currently serves as the Chair of the Department of Surgery, Houston Methodist, Houston, TX. She is holding several other positions in the same institute: She is the John F Jr and Carolyn Bookout Presidential Distinguished Chair of the Department of Surgery; the Professor of Surgery at Institute for Academic Medicine; and the Founder and Executive Director of Houston Methodist Institute for Technology, Innovation



Figure 1 Prof. Barbara L. Bass and Editor Miss Silvia Zhou.

& Education Houston Methodist (MITIE). She has served as the President of the American College of Surgeons from 2017–2018.

Prof. Bass' current practice is primarily in surgical oncology, including breast and endocrine disorders. In her medical center, she trains surgical residents at all levels and incorporates medical students into her clinical practice. She has published in a multitude of distinguished journals including *Surgery*, *Journal of Surgical Research*, *Annals of Surgery*, *Journal of the American College of Surgeons*, *The American Journal of Surgery*, *Journal of Gastrointestinal Surgery* and so on. She is the recipient of Honorary Fellowship from the Royal College of Surgeons (England), The College of Surgeons of East, Central, and Southern Africa, and the Royal College of Surgeons of Ireland.

Interview

JOVS: Would you recall your first experience participating in the ACS Clinical Congress?

Prof. Bass: I've been involved in the American College of Surgeons for many years. My first presentation was in 1983 when I was a resident in surgery. At that time, I was doing

a two-year research fellowship in the middle of my surgical training. I came and presented at our scientific symposium known as the Surgical Forum. I presented at the Surgical Forum every year for about the first 10 or so years of my career and thereafter my resident research fellows would present our work. During that time, I became more familiar with the College. Our scientific programs have evolved as have our educational programs tremendously over the last 35 years. When I finished my training, my first research scholarship—the first funding from my laboratory—came from the American College of Surgeons as a Surgical Research Faculty Career Development Award. That award jump-started my research program.

JOVS: *How has ACS been influencing you?*

Prof. Bass: In many respects, the College has been my surgical professional home outside of my job. For many surgeons, the College provides great career support. It's an organization that is committed to fostering the development of surgeons' careers by education, networking, developing a niche to serve their profession, whether in advocacy or in research or in quality. It's been a great spot for me to invest a lot of my personal volunteer effort on behalf of the profession whether it's serving on the research committee or on the program committee. The program committee folds together the scientific, clinical, and educational programs here at the congress. And then we have various governance and service organizations. We have the board of governors where I served for 6 years. And then I served on the board of regents, which is our more senior governing body, for 9 years. Afterwards, I had the unbelievably good fortune to be elected as president which was truly the most gratifying honor I could ever imagine in my career.

JOVS: *Would you introduce us to your role as the ACS President? What are the most challenging/rewarding aspects of it?*

Prof. Bass: As the President of the American College of Surgeons, I have several roles. The job is not a governance role for we have an enormous infrastructure set up in our college of committees, organizations and programs that work in our pillars in advocacy, education and quality. We have at any given time in this college thousands of volunteer surgeons who are committed to developing these programs.

As president, I serve two purposes—first, as an ambassador for the college. It's very important for me to

go and visit surgeons around our nation to find out what they need from ACS to optimize their surgical practices, and to help them be satisfied and successful in their career. I learned a lot this year by visiting our surgeons and learning from them, but I had the chance to share with them about the program that the college has developed to serve them and their patients. Another mission is to cultivate the young people who are coming along on our profession. I have travelled to many places around the world to share the College's missions. The most rewarding aspect is to see that surgeons around the world are all the same—we care about our patients, we care about quality, we care about lifelong learning, and we care about safe innovations in surgery. It's amazing how similar we are!

The second thing that I did as president was that I had the opportunity to network with women surgeons around the world. Around the world there are not as many women in surgery as we have in the States now. It was personally gratifying to gather with the young women surgeons around the globe and find the one or two older women in each nation who were the pioneers in their discipline. This year we've actually formed some new networks of women surgeons who I hope will feel as equally engaged in this profession as I have been. I had a chance to initial a new program on intimate partner violence, the harm that individuals can suffer from their partners—women or men, and it's an under-recognized and stigmatized terrible problem that affects couples far too often, with women often the victim.

I've also had a particular interest in continuing the education, particularly the technical and procedural training, of surgeons in practice. We've spent a lot of time in medical school and surgical training but people are in practice for 20, 30, 40 years and their requirement to retool, retrain, and learn new technologies can be very challenging. We've developed a program at the ACS and at my institution in Houston known as MITIE and we have a working group at the College to build the educational infrastructure to use simulation based training for surgeons to safely adopt and train in new technologies throughout their careers.

JOVS: *Why would you select "Joy and Privilege of a Surgical Career" as the theme of this year's Congress?*

Prof. Bass: I think what we as surgeons do is extraordinary. When I think about other jobs I just can't imagine anything else that could be as exciting or rewarding as what we

surgeons have the privilege to do. I think the thing that makes it different from so many other careers is the special bond that a surgeon has with a patient, the amount of trust that patients must have to allow this person that they've just met once or twice in the office or even 10 minutes before, if it's an emergency, to take them to the operating room, to be surrounded by strangers, and to have them use their hands and tools to fix their bodies. What an amazing extraordinary privilege that is! There's great joy in it. I want to highlight that great privilege and great joy because it's very easy these days to get down in the dumps to feel like "this is really hard" and to indeed slip into the epidemic of burnout in our profession. Things can be hard, but let's remember the incredible treasure we have and getting to do what we get to do. It is a great responsibility, at times a burden, but fundamentally a joy and privilege, but it's really worth it.

JOVS: *What made you interested in surgical oncology?*

Prof. Bass: Surgical oncology is an important part of what surgeons do, and one of the main fields that has seen wonderfully exciting discoveries over the last 20 years. There are two fundamental things that we've learned—one is that you have to practice as a team in cancer care. We have created highly integrated multidisciplinary treatment of patients, so it's a great discipline in the sense that you get to work with many fabulous colleagues in different disciplines from medicine, radiation oncology, pathology and imaging. In regards to breast, breast cancer is a common disease in women, but the beauty of caring for patients with breast cancer at this stage of my career is to be able to reflect on how we treated breast cancer when I was a resident and how we treat now. It's just night and day to see that real progress and success in multidisciplinary management with breast conservation, targeted therapies, effective adjuvant and primary prevention therapies. There are many things about surgical oncology that I think are so rewarding.

JOVS: *Can you introduce us to your most recent research work, including its scope, purpose, duration of funding if any and current status?*

Prof. Bass: Throughout my career, I've always been a clinician scientist. I started this research with fellowship from the ACS and in my first 17 years I was funded by the National Institute of Health (NIH) and VA Research Health Care System. For the last 10 years, I've been funded

by a variety of organizations including the National Science Foundation and the NIH. My work has transitioned from biology to all new scientific partners in surgery including mathematicians, bioengineers, material scientists and nanoscientists. It reflects the evolution of our understanding of surgical disease to incorporate those new hard disciplines as opposed to just being focused solely on biology. My research team has created a computational surgery program. We have a program to study conformation of the breast after breast conserving therapy. We use mathematical models and tissue based models to predict for a woman who's having breast conserving therapy, for example, what her breast will look like after lumpectomy and radiation. There are ways that we might be able to inform her so she will make the most appropriate decision for herself. Developing patient-centered clinical decision support tools has been the major focus. Also, we have a large research facility known as MITIE, which is a surgical training center focused on using simulation to train surgeons, medical students and residents. We have a substantial research portfolio in both technology development in what we call precision surgery, minimal access, image-guided, and computer-aided surgery. MITIE is a platform to develop those technologies and then subsequently to train surgeons in those new technologies.

JOVS: *Practicing in an academic medical center, you have plenty of experience in training surgical residents at all levels. What is your center's resident training system like?*

Prof. Bass: The American system of training surgeons is very mature at this point, but there's always room for progress. We are continuously modifying our surgical training pathways, but we believe very firmly that a surgeon should be a complete surgeon, and be informed in all aspects of surgical care from the preoperative decision making, peri-operative care, the operation itself, post-operative care, to continuity of care thereafter. We build our residency programs to deliver surgeons that are trained in all those elements including obviously the technical performance of surgery. Our training program in general surgery is 5 years long based on a system of graduated responsibility founded on a didactic component. There is a body of knowledge they need to acquire to enable them to learn as many skills as possible before they actually apply those skills on patients. The vast majority of how you train a surgeon is experiential learning, our residents do that by participating in the care of patients in a teaching hospital

which can be in community based settings or university hospitals, public hospitals or children hospitals. A defining mission of teaching hospitals is that the faculty surgeons at their hospitals raise young surgeons by including them in clinical practices to allow them to develop all those skills we expect surgeons to have over the course of the 5 years. At the end of the period, we expect them to pass very stringent examinations delivered by one of our American boards of surgery depending on different disciplines. I am very proud of the surgeons we deliver to our public.

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