

"How Reptiles, the SR-71, 9/11, and Bill Murray Make US Better Surgeons"

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Leading the Vascular and Endovascular Surgery Society (VESS) has been a great honor. Our society represents many things to many people, for me its friendship, support, knowledge, and growth. While presidential addresses are a new thing for me, but do not be surprised, I may veer back to aortic surgery once or twice. Maybe just maybe, I will have other opportunities to address my colleagues en masse, but because this may be my last shot at this, I really thought hard what I could say. I worried about being to tangential, or not having enough quips to keep people interested, or just not having anything worth saying. So here goes, my Gladwell-esque trip down the rabbit hole of the VESS, 15 years a surgeon.

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Anatomy of a Murder¹ is a courtroom drama set in the upper peninsula of Michigan. It is based on the 1952 real life murder of Maurice Chenoweth by a local policeman who stated he was overcome with rage over the Maurice's rape of his wife. The district attorney defending the policeman was John Voelcker, who would later rise to the Michigan Supreme Court. Under a pen name Robert Traver, Mr. Voelcker would write the Anatomy of a Murder, 7 years after the case in which he acted as the defense. The book is widely considered to be the best courtroom drama ever. As another first, the musical score was performed by jazz legend Duke Ellington,

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Ann Vasc Surg 2020; **■**: 1–8

https://doi.org/10.1016/j.avsg.2020.10.001

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Manuscript received: October 8, 2020; manuscript accepted: October 8, 2020; published online: ■ ■

the first musical score by an African-American in cinematic history. Film historians also recognize it as a landmark—the first significant Hollywood film comprising nondiegetic music, that is, music whose source is not visible or implied by action in the film, like an on-screen band. Duke Ellington's score and occasional appearances in the film also broke the cultural stereotypes characterized by previous jazz scores in the film industry. However, the movie was not received with kudos by all. Then Chicago mayor Richard Daley, an devout Irish Catholic, banned the 1958 movie from Chicago as it mentioned "climax" and "contraceptive", and God forbid even showed a woman's panties—all these a first in American cinema. A cringeworthy scene from the movie (video, vesurgery.org) is notable for the judge stopping the proceedings over the terminology of women's undergarments and implying the suggestive nature of the French term "lingerie". Voelcker was known to be liberally minded on the bench and in his civic life, starting a scholarship fund for Native Americans to attend University of Michigan Law School. I honestly believe he wrote this part of the script as a comedic segment, but the reception to the movie varied widely. The reception of Anatomy of a Murder became national news; Daley was undoubtedly the most powerful democrat in the Midwest, and he played a key role in the rise of the young senator from Massachusetts, John F. Kennedy. But no wilting flower, Mr. Voelcker countered dismissively of the urban power broker, "I would rather fly fish in Michigan, than have emeralds in Chicago". The movie version would star Jimmy Stewart earning him his last major film award, and George C. Scott. Notably, both would die of vascular disease, one from PE and the other from a ruptured abdominal aortic aneurysm. The case theory underpinning the novel was centered on the pliability of the jury toward the notion of temporary insanity based on

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a crime of passion (i.e., killing the man who assaults one's wife) and the fallibility of the witnesses. The reality of a courtroom made for an amazing movie, 60 years on it is still valued for its depiction, but thankfully courtrooms are unknown to most. They make for good drama, and unfortunately, a place ripe for surgeons to be taken.

Surgeons remain the most sued specialists,² and a courtroom is not the like any place a surgeon has seen before. The first courthouse I ever stepped in to defend a surgeon was none other than the same courtroom in Marquette Michigan, where Jimmy Stewart was filmed as the star of Anatomy of a Murder. Other than the Supreme Court, to try a case in this courtroom is every Michigan lawyers' dream—the acoustics are perfect and the cupola is a national landmark. (Fig. 1). However, courtrooms are not case conference, where the options are discussed and intelligent disagreements are noted. It is not "M and m", where the occasional nonvascular surgeon may query you as to some anatomic minutia you did not cite or account for. The glare of the opposing attorney or their client is not like a resident looking down from the podium to better explain a bad outcome. Among allegations of negligence, of which I am generally aware among my colleagues are failures in diagnosis or management:

- 1. Aortic dissection.
- 2. Carotid dissection.
- 3. Stroke from carotid stenosis.
- 4. Aortic aneurysm.
- 5. Limb loss after intervention.
- 6. Peripheral embolism.
- 7. Gangrene.
- 8. Limb loss after orthopedic surgery.
- 9. Compartment syndrome.
- 10. Retroperitoneal hematoma.
- 11. DVT and pulmonary embolism.
- 12. Anticoagulation complications.

And the list goes on, but if this list seems like the census of your inpatient service, or a cross section of your weekly clinic, then welcome home. This is our field!! Similar lists could be generated by any vascular specialist, be it interventional radiology or cardiology.

Now the function of a jury to decide malpractice cases is to understand the evidence, but not how they, as members of the jury, might wish to be treated.³ Plaintiff's attorneys have seized the notion of appealing to patient safety. It goes like this: the attorney asks the hospital accused of negligence as a party to the suit is asked, "Does your hospital believe their patients should be treated safely?"

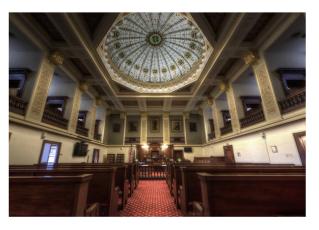


Fig. 1. The courtroom and cupola of the Marquette County Courthouse, Marquette, Michigan.

The hospital representative then answers yes. Of course they do, because safety measures, rightly or wrongly applied, are now synonymous with hospital quality. The doctor, say being questioned about a patient with chest pain, is told, "Doctor, your administrator under questioning said the hospital is a place where patients should be treated safely, isn't it unsafe to discharge a patient without chest pain if your own differential diagnosis included aortic dissection or pulmonary embolism?" followed quickly by, "Safety is your main priority, right?" The doctor feels boxed in, and acquiesces "yes". This line of questioning has nothing to do with the case at hand; it is meant to make the juror feel unsafe and leave the defendant in an inflexible position on safety. This forms the basis of the reptile theory that humans cannot help but to act instinctively to protect their family or community.⁴ If a reptile is under duress, it will retreat to safety or strike to at the source of attack. This is the limbic system at work, derailing the higher neocortex of judgment and planning. The end run is to make the juror feel personally threatened by the defendant, and it is effective, to the tune of billions in settlements.

Recognize also that surgeons are not viewed in the best light. Hollywood personifies surgeons as bold, boorish, and temperamental. Considering this, psychopaths are defined as a constellation of disinhibition, boldness, and meanness. Can you recall from training feeling meanness, or watching a bold move in the operating room, or hearing an off-color remark? In psychology, boldness corresponds to low neuroticism and high extraversion, meanness corresponds to low agreeableness, and disinhibition corresponds to low conscientiousness. Researchers took these traits, as they are nested is Myers-Briggs tests that are taken across the country daily, and pulled the data as to where psychopathy is

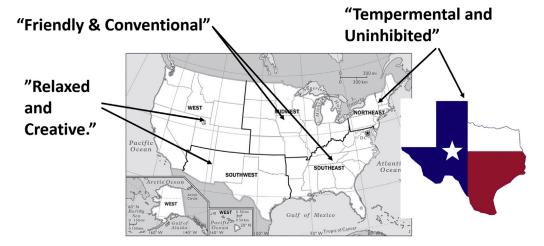


Fig. 2. Nested personality types by regions in the United States.

most prevalent. On a side note, they also generally categorized the US regions by cluster analysis for personality (Fig. 2), 5 based on the prevalence of these 3 traits, arriving at

- 1. "Friendly and conventional": the Midwest and South.
- 2. "Relaxed and creative": primarily Southwest and Pacific Northwest.
- 3. "Temperamental and uninhibited": corresponding to the Northeastplus Texas.

To ranking the psychotics, first place goes to the District of Columbia, then Connecticut, California, New Jersey, New York, which tied for fifth with Wyoming. The t-statistic for D.C. is 3.48 and Connecticut is 1.9, suggesting the robust findings of those in our seat of national power, perfectly evidenced by the morass of 2020.

The good news is 95% of jurors change their mind during the trial. We just need to mind our "p and qs". The defense of the doctor goes second, so taming the reptile is a doable process:

1. First, nothing can fully prevent danger. As doctors, we regularly weigh risk and benefit, and swapping a diagnosis and its treatment is what we do daily. This is called judgment! For example, I chose to do a supraceliac clamp to repair an aneurysm, rather than sewing to the diseased aorta with an infrarenal clamp. I chose to chimney a renal versus a fenestrated device because I think it may reduce procedure time for a patient with terrible lungs.

- 2. We treat patients, not overly broad differential diagnoses that are impractical. Be situation specific to the data available, and the jurors will resist the reptile safety response.
- 3. Complexity is your enemy—it will be viewed as dodging and obfuscation. Just answer the question, but include just enough context...not a long winded diatribe of the differential.
- 4. Finally, and most importantly, remember, "no operation is 100% safe."

These ways of thinking are not taught in medical school or residency. When I was pimped, it was one question, one answer. Faster the better! About 50% of us in the room will have a suit while they are active members of the VESS, when you are like me, at 50 and beyond, the other half are likely to have a suit too. The math is not untrue; 99% of physicians in high-risk specialties will have a suit filed against them by age 65.2 Most cases will never come to the inside of a courtroom. Hard as it sounds, we should embrace the reality of our system and not devalue what we do based on payouts which can spiral into millions for reasons beyond our control. Listen to Robert Traver speaking through Jimmy Stewart in Anatomy of a Murder, stated most eloquently, "God knows, no other system has yet been found for governing men except violence. The law is society's safety valve, it most painless way to achieve social catharsis; any other way lies anarchy." True in 1959, and true in 2020, we have no reason to fear that pitchforks await us for good care done with good decision basis.

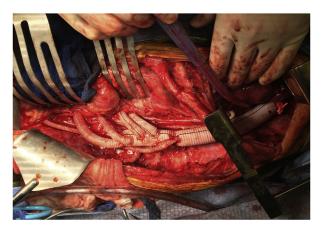
Where then do we struggle with vascular surgery and how can young surgeons mind the gap?



Fig. 3. The SR-71 Blackbird, in service 1964—1998, for the United States Air Force, The National Aeronautical and Space Administration, and the Central Intelligence Agency.

Richard Cook, then at the University of Chicago, wrote a treatise "How Complex Systems Fail." The document is full of 18 axioms of system failure analysis. It is a must read, a truly seminal document. Its 18 axioms read like surgical aphorisms (definition: a pithy observation based on truth). Aphorisms are often gained by our mentors; my earliest mentor, James S.T. Yao, MD: "you read comic books, I write text books." Later on in residency, John Cameron, MD, after I hit the portal vein, "Who's side are you on... the patients or the disease? ", and Richard Cambria, MD, "control the suture or the suture will control you". I have a few of my own, often picked up on late night cases: like, "there is no pain like leg pain." We engage casual conversation at meetings like this, "When nervous, I give more heparin," said to me by Krassi Invancev, MD, father of aortic endografting. That is pure brilliance and it works; of course vessels cannulated and torqued are less likely to clot! I sometimes dig into history, like Halsted "the only weapon for which a patient can respond to an incompetent surgeon is hemorrhage." The last one is most harsh, so I suggest you forget it quickly, lest you suffer the recrimination!

Cook's best aphorism, in my opinion, is "Failure Free Operations Require Experience with Failure". This is his take at "edge of the envelope" of skills. It is akin taking the SR-71 (Fig. 3) to mach 3.2, it can do it, as it did it in 25 years of continual service over 16 million air miles of supersonic spying in the cold war. If you ever wonder why the government buys \$800 toilet seats and \$500 hammers, this



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Fig. 4. Extensive thoracoabdominal reconstruction or rapid aneurysmal degeneration of the entire aorta in a 12-year-old Loeys Dietz patient with acute type B dissection.

longest running top secret program is the answer. This plane can do 2200 mph and remains 30 years after its debut the fastest plane ever made. However, why not cruise at a cool 2000 miles per hour, mach 3? Both can get the job done, and the "edge" according to Cook is where the system performance degrades, and it is hard to recover. So true for the SR71... The curse of an SR-71 flying at max speed was the unpredictable and abrupt "unstart of an engine", inducing a yaw, rapid deceleration, and a sonic boom across the airframe, causing the plane to leap out of its path. At low speeds, it produces a crowd-pleasing fireball. At high speeds, the deceleration is so violent, the pilots could black out—if they were lucky, they awoke to gain control. In fact, only one pilot ever survived an unstart at a max altitude of 85,000 feet, flying above mach 3.0, in 25 years of flying time. Colonel Bill Weaver did so, unconscious and with a broken neck, only because sensors detected the abrupt drop in altitude. The automatic ejection seat punched him out at 30,000 feet, had he ejected at 60,000 feet plus, his blood would have boiled instantly from the lack of atmospheric pressure.7

Consider a true edge of the envelope surgery: a 12-year-old girl, inborn with a severe connective tissue disorder that has doomed her aorta to a type b dissection. This is the graft (Fig. 4). But since the pediatric ICU had seen only one TAAA repair many years earlier, adding the time to exchange a double lumen tube to a single lumen was so long due to neck deformity, the time from closure to first laboratory draw in the ICU was 2 hours. The tubes were now wet, the platelets were 62, and the high output was ascribed to coagulopathy and not a surgical

bleeder. All nightlong bleeding, transfusion, and pressors were written off as usual resuscitation. In other units, when hitting 6 units of transfusion, I had to be called. That night, the chain of command failed. The fix was one stitch, and she never recovered and died 6 weeks later, after every form of organ failure. The gap is now minded in our hospital in transitions of care, especially in "cross-ICU" situations where the most experienced nurses may not be at hand. Lessons in medicine are egregiously tough, cue the iconic Jeff Goldblum saying, "So preoccupied with if you could, you didn't stop to ask if you should."

Vascular surgeons are there in the arena where there is no effort that is not accompanied by some error and shortcoming, so it will be a virtual certainty that these gaps will open. That is our job in vascular surgery. We need to find ways to guard against failure in our own work, learn how to fail do so in ways that carry the least negative impact, and for purpose of preserving our ability to treat all patients, fail cheaply. A good example is the consternation and debate over the state of lower extremity interventions,8 with yet another dart thrown at paclitaxel this month about amputations. Coming together with multiple specialties to address this with the FDA is the right thing for patients, despite personal misgivings how one may view such interventions. Initially, the VESS went on our own with multiple societies, but without the SVS....collaboration should be a good thing and I saw value in fostering trust among specialties. Also if you are not at the table, you might be on the menu! Working across specialties is the right way, and I am happy to report the SVS and SCVS and the VESS are now partners to provide surgical vision and oversight for issues to cross the radar in the future. The SVS has the infrastructure for wider governance, but the "three nationals" vision is good for all vascular surgeons. As opportunities open for consensus work, focus groups, and committees, VESS members will play significant roles in national discussions to the perspective of new surgeons and their skills to address patients best. Nolan Ryan, said of such moments, "One of the beautiful things about baseball is that every once in a while you come into a situation where you want to, and where you have to, reach down and prove something." Look no farther than the great work of VESS members Bernadette Aulivola, Matt Smeds, and members of our women and diversity committee, to the issues of our workforce in surgery. With their guidance, we set to change our mission statement to reflect the VESS is the place for diversity and inclusion. We will be the first national vascular society to state so on our mission. Thanks to them for reaching down and allowing us to prove something. However, there is more work to do, I know. This year we had 9 immense qualified people apply for a single councilor position. It is an embarrassment of riches, but by taking the VESS as a member of the three "nationals", I hope to find a home for everyone to make their own major contribution to the VESS and our national partners.

One area we must focus on is the evolving competition of great medical students who are debating the merits of vascular surgery over other specialties with integrated programs. Yes, "New Innovations" or similar online evaluations may represent the science of education taking the joy out of teaching. But we can show students, residents, and fellows there are so many roads to success. Vascular surgery is great in that way; there is a place for everyone. Consider research, those entering the ranks have more tools and insights into research than we ever had. I remember thinking a Northern blot was super cool; now a high-school student can run a gene sequencer. But the only thing any of us can do completely on our own is to have the start of a good idea. These ideas can come in any form, research, clinical, or teaching. For me, it was the notion that if we keep mean pressures at 60 during open heart surgery for hours, why should not I try to fix the most dangerous cases of vascular EDS with induced severe hypotension to foster less stress on a vascular anastomosis. Brilliant residents analyzed the strategy in ways I could not. 10-14 There are great surgeons in this room, and we need to show new surgeons how to learn best. In addition, there is a lot to learn, much more than in 2004 when I hit the faculty ranks.

So how best to build your knowledge bank? Consider the seminal event of history for our generation...9-11. Every person in this room has a story of 9-11 remembrance. That day, a consortium of researchers from across the United States asked hundreds of survey takers the circumstances in which they heard of the attacks. The first survey was completed by 9-18, then again at a year, three years, and 5-10 years. The memories recalled over all those surveys by US citizens are called "flashbulb" memories. Surprisingly, they are not reliable. For me, I heard of the first plane hitting the tower walking out of OR 1 at Hopkins. And I saw the south tower fall while I stood in the ICU break room. The rest of my day I cannot totally trust. I know we cleared all but 2 patients from the ICUs by 1 PM make way for the Pentagon victims because I had to report it to Dr. Cameron. These graphs show the results of the surveys (Fig. 5); note the y axis, 6 Black Annals of Vascular Surgery

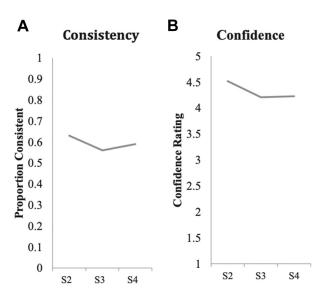


Fig. 5. Memory recollection of September 11, 2001 over 5-year survey period. (A) Surveys scores for recollection accuracy across survey intervals. (B) Subject self assessment of their confidence in memory veracity across survey intervals.

roughly 20–30% of our memories degrade within 1 to 3 years, but we are nearly as certain years later we are spot on in our recollections. Sound like a surgeon? Very confident, but 20-30% we are sometimes wrong!! Flashbulb memories are like recalling a surgery years later; we are trying to learn in an emotionally charged environment and our memories will degrade. But losing 20-30% of what you learn in the OR is way too much. These flashbulbs can dim and fail. To the trainees, I do not know the answer here, but this worked for me...draw a picture (Fig. 6) and make a few notes. When you are faculty, go back and look at a few drawings you made of similar cases to pick up a pointer before you go in the OR. Maybe it is some anatomic tidbit, maybe it is a catheter and wire combination you seem to have a knack for. You will be guided by these flashbulbs...and in doing so, you will light the way for success.

The flip side of success is failure. I know of a medical student, who desperately wanted to do surgery at Hopkins. He did not get the spot and applied year after year for a surgery residency, each denied by the then chief of surgery. Along the way, he did a year of urology, tried a surgery year elsewhere, and tried ENT. Each time he was not renewed because of average performance. He moved to Nashville, started working in a laboratory at Vanderbilt, and finished surgery training there, learning technique from a very capable laboratory assistant. That surgeon was Alfred Blalock and his laboratory

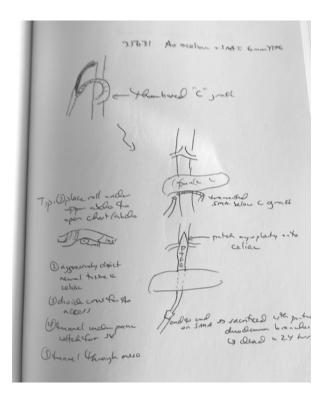


Fig. 6. Drawings of surgical fellowship experiences, Massachusetts General Hospital, 2001.

assistant Vivien Thomas, whose blue-baby operation ushered in the era of cardiovascular surgery at Johns Hopkins and the world. This is one of a few existing videos of Dr. Blalock and forgive the track, but I want you to observe the characteristics of a true innovator (vesurgery.org). I see a surgeon who is completely in command of the arena, smart, and a low-medium intensity, at best. There is no big stick, but only talking softly. Insights that are to the point and funny; I do not know what Dr. Blalock would say of this talk today, but according to him, I have 10 years until I retire, contemplate a year, and meet my Kevorkian ending. Keep the example of the gentle surgeon, and our field will grow and grow.

At some point, you will come upon a great opportunity to help your community outside the hospital. As surgeons, we have lost our connection to the community, and we have to reconnect. What we can give is our time or our money, depending on where you are in life, work, family, most in this room will have only one or the other to give...time or money. So coach a team, work on a school board, pick up a bill for lunch for the office, anything that crosses out of the hospital. Although gripes about pay, fairness, and equity are certainly common, most surgeons will land in the top 10th percentile of income attainment easily. Our pay is important,

and companies under stress to retain proven talent must pay top of the market. This is the philosophy made famous by the Netflix corporate culture and forms one of the bases for making a job change in my view. The reasons to make a job change add up to four:

- 1. You are being treated unfairly.
- 2. You are being paid unfairly.
- 3. You need a job change to save a relationship.
- 4. You need a career reboot, and you cannot do it in place.

Any one of these conditions is of enough consequence to move on. More than one usually means one is a desperate position.

Finding enjoyment in work is a goal for everyone. In the book, The Tao of Bill Murray, one mantra is "drop coin on the world." Simply put, it is a reminder to be generous. Sure, Bill is famous for crashing a party, or the White House, and most likely if one of us was to do the same, we would leave in handcuffs, so I do not suggest it. But he gives his time to people. Bill Murray, some 25 years before me, caddied the same country club in Wilmette, Illinois, where I worked. He was famous for improving a lie for older players, and the caddies' zingers are written with his brother in the movie Caddyshack. True to form, a particularly elderly player "scored" a hole in one. There was a big party, and probably a big tip for Bill. Well, some period of time went by, and again, the same elderly player, caddied by Bill Murray again, scored another. Eventually, the caddymaster caught up with Bill's ruse, and told him to cool it. Decades later, in line with his "drop coin mantra", he bought a ticket for the American Museum of Natural History Hudson River Sturgeon Biodiversity Conference. As he came to the discussion microphone, he acknowledged, "some of you might be wondering what I am doing here?" He went on to explain he lived on the Hudson and he was concerned to the travails of the fish. But that was not enough he added, "I looked up sturgeon in my dictionary from 1954, when men were men, women were chicks, and sturgeon were sturgeon". Leveraging a laugh out of the infamous lack of evolution of sturgeon over the eons, he then worked the room like Nick the lounge singer and tossed a crumpled check at the organizer—a signed blank check noted in the memo for "Sturgeon". Murray's lesson is be generous with money if you do not have time and be generous with your time if you do not have money. Either will connect us to our students, residents, fellows, community.

It is high time for the slopes, so remember, the VESS has become a great place for all surgeons, where we share the intellectual wins and perils of practice and life as vascular surgeons. The VESS did not become great from being woke; it rose because our members saw a space in vascular surgery circles where our perspective matters. And the Vascular and Endovascular Surgery Society did not become great from lack of debate, just look at our track record for publication besting ever other society. The VESS did not become great by eschewing our friends in other specialties, just look to our collaborations with IR, cardiology, and vascular medicine to advance the care of all patients, no matter the specialty of the primary operator. So we have to keep our script new and evolve to the needs of our workforce. So the new script of the VESS in 2020 and beyond is going to be written by all of you. I look forward to all of your ideas, energy, and leadership in the future. Herein ends my script, and I thank you all for letting me be your president.

REFERENCES

- Traver, R. Anatomy of a Murder. 1958; St. Martins Press. New York, NY.
- Jena AB, Seabury S, Lakdawalla D, et al. Malpractice risk according to physician specialty. N Engl J Med 2011;365: 629–36.
- 3. Brewer TD. Confronting the reptile in Virginia. J Civil Litigation 2018;30:187–200. No2.
- **4.** Allen SW, Schwartz JM, Wyzga D. Atticus Finch would not Approve: why a courtroom full of reptiles is a bad idea. The Jury Expert. The American Society of Trial Consultants, 2010.
- Murphy RH. Psychopathy by U.S. state: a translation of regional measures of the Big Five personality traits to regional measures of psychopathy. Heliyon 2019;5: e01306.
- 6. Cook RJ. How complex systems fail: being a short treatise on the nature of failure; how failure is evaluated; how failure is attributed to proximate cause, and the resulting new understanding of patient safety. Chicago, IL: Cognitive Technologies Laboratory, University of Chicago, 1998.
- Rich Ben, Janos Leo. Skunk Works: A Personal Memoir of My Years at Lockheed. First ed. Boston, MA: Back Bay Books, 1996.
- 8. Katsanos K, Spiliopoulos S, Kitrou P, et al. Risk of Death following Application of paclitaxel-Coated Balloons and Stents in the Femoropopliteal Artery of the leg: a Systematic review and Meta-analysis of Randomized Controlled Trials. JAHA 2018:7:18.
- Katsanos K, Spiliopoulos S, Kitrou P, et al. Risk of Death and amputation with Use of paclitaxel-Coated Balloons in the Infrapopliteal Arteries for treatment of Critical Limb Ischemia: a Systematic review and Meta-analysis of Randomized Controlled Trials. JVIR 2020;31:202—12.
- Brooke BS, Arnauotakis G, McDonnell N, et al. Contemporary management of vascular complications associated with Ehlers-Danlos Syndrome. J Vasc Surg 2010;51:131–8.

- 11. Lum YW, Brooke BS, Arnauotakis GJ, et al. Endovascular procedures in patients with Ehlers-Danlos Syndrome: a review of clinical outcomes and iatrogenic complications. Ann Vasc Surg 2012 Jan;26:25—33.
- 12. Glebova NO, Hicks CW, Taylor R, et al. Readmissions after complex aneurysm repair are frequent, costly, and primarily at nonindex hospitals. J Vasc Surg 2014;60: 1429–37.
- 13. Beaulieu RB, Hicks CW, Lue J, et al. Surgical management of peripheral vascular manifestations of Loeys-Dietz Syndrome. Ann Vasc Surg 2017;38:10–6.
- 14. Hicks CW, Lue J, Glebova NO, et al. A 10 year institutional experience with openbranched graft reconstruction of aortic aneurysms in connective tissue disorders versus degenerative disease. J Vasc Surg 2017;66:1406–16.
- 15. Hirst W, Phelps EA, Meksin R, et al. A ten-year follow-up of a study of memory for the attack of September 11, 2001: flashbulb memories and memories for flashbulb events. J Exp Psychol Gen 2015;144:604–23.
- Edwards G. The Tao of Bill Murray: Real-Life Stories of Joy, Enlightenment, and Party Crashing. New York, NY: Random House, 2016.