

## May

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May! The Oxford English Dictionary defines 'may' as a noun from the Latin maius (referring to the Roman fertility goddess Maia and rebirth) or a verb of Germanic origin (meaning "power" as in might) indicating what is possible or expressing a wish or hope. "May" is appropriate for this year's meeting in Reno, where we hope for a powerful annual scientific meeting celebrating what is possible through knowledge and signifying a rebirth of normalcy.

When I came to the Federal Aviation Administration (FAA) Office of Aerospace Medicine in 2006, I considered myself knowledgeable about cardiology based on my experience as a U.S. Navy Flight Surgeon and Aerospace Medicine (AM) specialist. That background centered on normal operators in an abnormal environment. However, AM practice at the FAA and other civil aviation authorities is risk assessment of abnormal operators in an abnormal environment. The very first FAA case I reviewed was a general aviation pilot with a history of atherosclerotic coronary artery disease treated by stenting and recurrent pulmonary embolisms leading to severe chronic thromboembolic pulmonary hypertension. I had wandered into the deep end of the pool without my floaty! Fortunately, I was able to turn to Dr. Jay Sands, one of a distinguished group of Federal Air Surgeon (FAS) cardiology consultants from academia and community practice. He helped me sort out that case, but also introduced me to our bi-monthly FAS Cardiology Panels. Held at the FAA Aerospace Medicine Certification Division in Oklahoma City, each panel reviews 50–60 cases over a day and a half. What I didn't see coming was attending 70+ panels and seeing thousands of cases. I fondly refer to this experience as the world's longest residency out-rotation.

In 2006, we knew change was coming, but certainly did not appreciate the scope of changes in cardiology that were on the horizon. Some learning points from those years:

- Coronary atherosclerotic artery disease: there continue to be advances in drug eluting stents which are no longer revolutionary but routine. Stenting is no longer just for your grandfather's cardiologist but for interventional cardiologists or interventional radiologists wherever they reach with a transluminal catheter. Fractional flow reserve (FFR) and intravascular ultrasound (IVUS) are routine to evaluate perplexing stenotic lesions. We've seen the rise (and fall) of the promise of cardiac CT from a revolution in diagnosing coronary artery disease to a rather singular use to measure "calcium score." Left main coronary disease previously required multivessel bypass surgery only, but now in select cases may be stented.
- Risk stratification for hypertrophic cardiomyopathy (HCM) was an enigma. We could identify who was at low risk (minimal follow-up) or high risk (needing an implanted

cardioverter-defibrillator), but could not understand the risks for those who fell in between. Studies from Europe were able to give much better risk estimates and we now routinely use an online risk calculator tool that gives evidence-based 5-year mortality estimates as part of our risk assessment.

- Aortic valve replacement requiring open chest surgery was a vexing problem in patients with severe stenotic disease, poor prognosis, and high surgical risks due to age, prior valvular surgery, or prior chest irradiation for malignancy. Originally intended as a last-ditch option, trans-catheter aortic valve replacement (TAVR) was developed for high-risk patients and is rapidly becoming the procedure of choice (e.g., Mick Jagger).
- Treatment of atrial fibrillation has been revolutionized by the advances in cardiac electrophysiology to map and perform highly focused ablation of foci of abnormal rhythms. Guidelines are well supported for medications for rhythm control and structural heart disease, anticoagulation, and procedures or devices to reduce thrombus formation in the atrial appendage (e.g., Watchman device).

Over the next decade, we will continue to see unexpected advances in cardiology. Examples include: artificial intelligence for predictive modeling concepts in diagnosis, and machine learning for interpretation of CT and MR imaging.

I look forward to seeing our many colleagues from the aerospace medicine community in Reno. This will also be a celebration of sorts, in that this will be the first time we've met jointly with our colleagues in the Undersea & Hyperbarics Medical Society since the 1998 meeting in Seattle. The meeting promises to be very interesting and more diverse than most with two additional plenary sessions and expanded educational track. Reno should be an excellent venue with a variety of options outside of the meeting itself for all to enjoy.

This is my final President's Page (to the relief of the Home Office staff!). My good friend and colleague Dr. Jim Fraser used to say when he was Federal Air Surgeon, "we live in interesting times!" They are so now and will continue to be over the next decade as we see new revolutions in aviation medicine and in the expansion of space and environmental medicine. Without taking cinematic sides between the devotees of *Star Wars* vs. *Star Trek*, I close with a hope that in 2023 we will see less "*May the Force be with you*" and more may you "*Live long and prosper*" for all of us worldwide.

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