Ask the Expert

Cardiac Anesthesia

Zachary Deutch, MD, FASA **Tiffany M. Williams, MD, PhD**

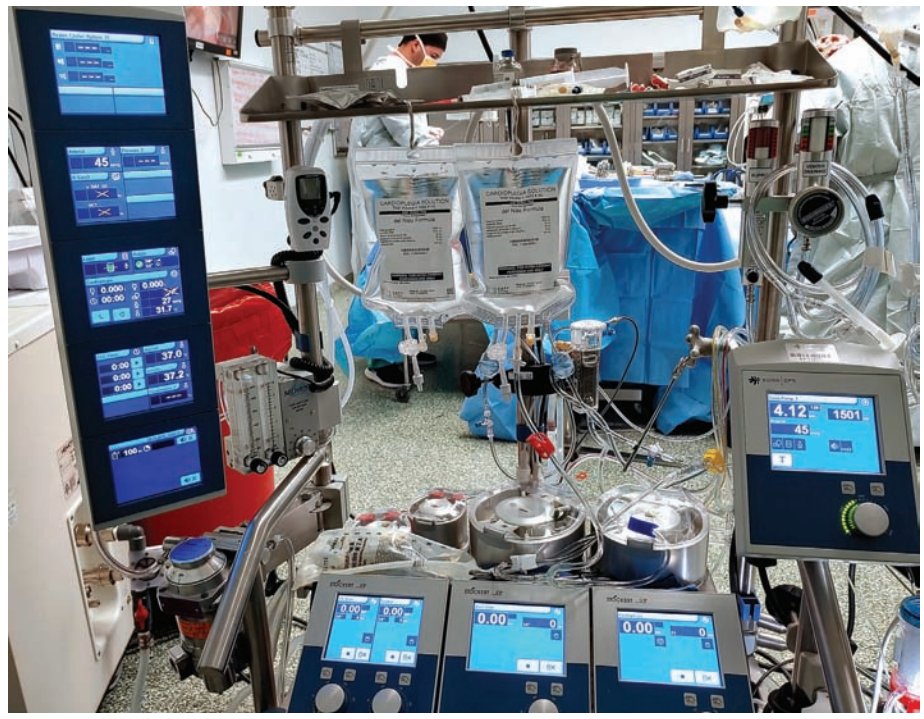
Welcome to another edition of "Ask the Expert!" When this column is printed, we will be well into the holiday season. As I write this, I am hoping that the public health situation will allow most of us to travel as we see fit and spend that time with family and friends. I personally am fortunate to have obtained time off around the Christmas Holiday but have been hesitant in booking any arrangements for fear that some aspect of the pandemic might throw a monkey wrench into any family plans.

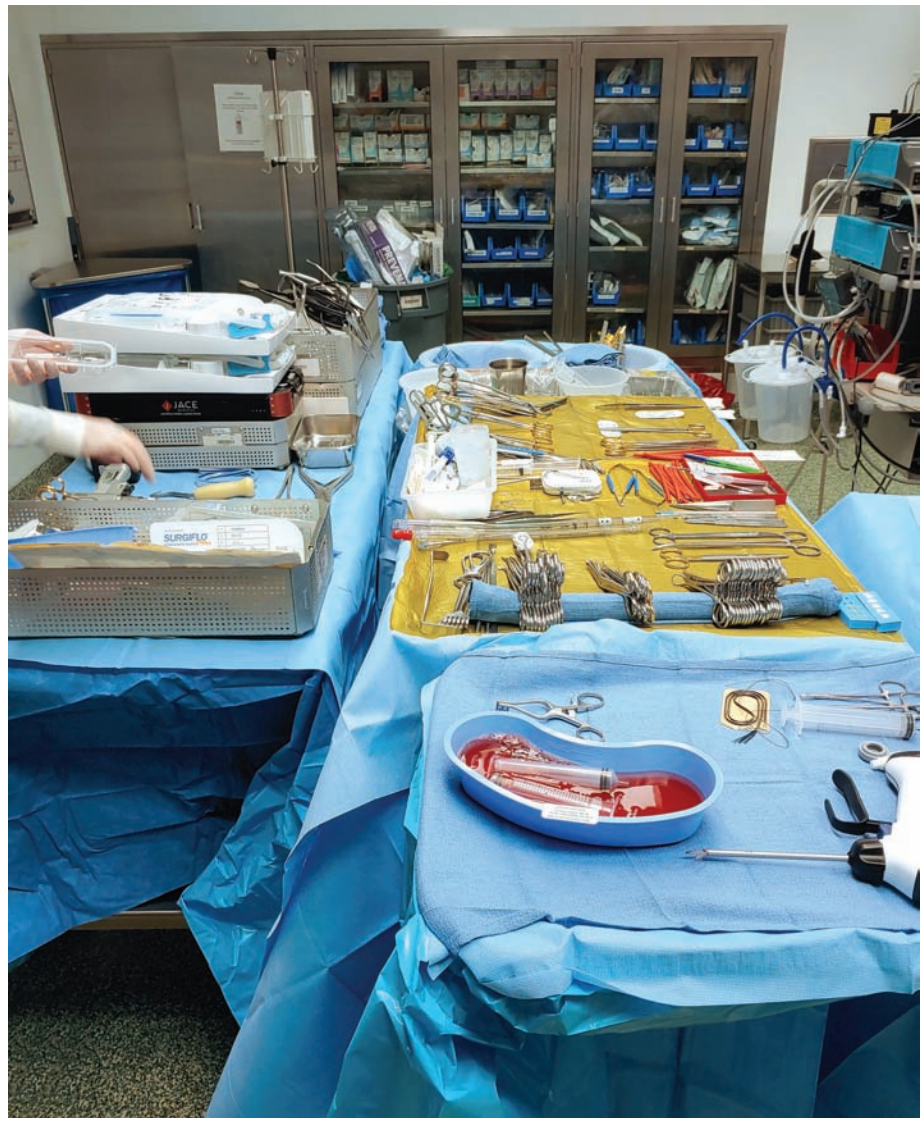
For readers' information, potential upcoming topics for this column (in no particular order) include obstetric anesthesia, critical care, international medicine, practice management, and medical ethics. These topics are all off the top of my head, but there are of course plenty more out there. Experts in any of these fields (or others) are invited to contact me. Also, any constructive feedback or suggestions for future topics can always be sent to me at ***zdeutch@yahoo.com****.*

This month, our expert is ***Tiffany Williams, MD, PhD,*** *from UCLA's Department of Anesthesiology and Perioperative Medicine. Dr. Williams will share her knowledge in the area of cardiothoracic anesthesia, a growing and evolving field, and one that I have a good deal of experience in, so I am eager to hear her informed responses.*

Thank you for agreeing to co-author, Tiffany, despite a very busy time for you professionally. Can you please describe your role and clinical duties at UCLA?

Thank you for inviting me to participate in this column. Currently, I am an Assistant Professor-in-Residence at UCLA in the Department of Anesthesiology and Perioperative Medicine. The majority of my clinical duties have to do with adult cardiothoracic and congenital cardiac anesthesiology. I typically spend two days per week in the cardiac ORs caring for patients ranging in age from neonates to the extreme elderly. I have a particular interest in congenital heart disease and often spend the remainder of my clinical time caring for these patients in the cath lab and/or when they undergo non-cardiac procedures. Apart from my clinical duties, I also conduct research focused on clinical outcomes in pediatric and adult congenital heart disease patients who undergo cardiac and non-cardiac procedures.





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Have you seen a decrease in open cardiac procedures ("pump cases") due to advances in interventional cardiology?

As the capabilities of interventional cardiology have increased, there has indeed been a concomitant decrease in open cardiac procedures and pump cases. I feel that the high-risk patients have benefited the most from this shift, since the less invasive interventional cardiology procedures have lower mortality and morbidity associated. Additionally, some of these newer interventions have allowed cardiologists and their patients to eliminate the need for re-operation(s) or have delayed the need for definitive surgical repair (such as in the case of trans-catheter pulmonary valve replacement).

Which cases do you find most challenging and why?

I find neonatal cardiac cases to be the most challenging, whether it is a baby with an obstructed total anomalous venous return or a baby with hypoplastic left heart syndrome. Caring for such small and fragile patients in a high-stakes setting can be quite daunting. Even though the complexity and risk are high, the reward of a good outcome is so sweet.

What are the most innovative and cutting-edge ways you are using echocardiography right now?

I think some of our most innovative uses of echocardiography are occurring in the cath lab with structural heart disease as well as in 3D imaging in congenital cardiology and cardiac surgery.

What is your opinion of Basic TEE training? Is it worth ASA members' time and effort?

I do believe there is value in having at least a rudimentary understanding of transesophageal echocardiography. Even

if anesthesiologists are not routinely performing TEE, a basic comprehension of the modality is useful in evaluating risk in one's patient, being able to interpret cardiologists' echo reports, and also being comfortable stepping in when clinical circumstances (such as severe, unexplained hypotension) dictate the need for rescue echocardiography. However, I do appreciate that repetition is key to the maintenance of any skill. For those who have an interest in basic TEE, that training can be a valuable asset, though I do not view it as essential for every practicing anesthesiologist.

Do you consider uncomplicated cardiac cases as core competency or should the heart room necessarily be staffed by a fellowship-trained physician?

I am slightly biased with respect to this question. In my experience, even "uncomplicated" cardiac cases can quickly become complicated. I think the experience gained during a cardiothoracic anesthesiology fellowship adequately prepares one for almost any possibility and increases ones' comfort in managing the myriad clinical variations and potential complications out there. I know there are many skilled anesthesiologists without fellowship training who provide excellent care for cardiac patients every day. However, the clinical exposure and consequent growth one receives during fellowship is invaluable and is therefore worth the time and effort. For anesthesia residents who have interest in cardiac cases, I think the best path forward is pursuing fellowship training.

From a reader's question: Can you comment on the huge variation in sterile technique (or lack thereof) in radial arterial line placement? Some treat it "like an I.V.," others go full-on aseptic. What does the literature/evidence say about this?

I like to err on the side of an abundance of caution. As such, I treat radial arterial lines as if I am in the clean room handling delicate material. During training, I did have various attendings tell me there is a low incidence of infection associated with radial arterial lines, independent of whether or not sterile technique is employed. While the literature on the subject is inconclusive, I also think there is no harm in inserting arterial lines in a sterile fashion, and I do not see a downside to doing so.

Does the pulmonary artery catheter (PAC) have a role in contemporary surgical care, or should we relegate it to the Wood Library-Museum?

While pulmonary artery catheters are likely over-used in contemporary cardiac surgery, there are certainly specific cases in which I think their value outweighs any potential risk. As an example, at UCLA, we perform a significant number of lung transplants, and the information from the PAC definitely aids in the management of these patients, especially those who have co-existing right heart dysfunction. PACs are also useful in patients who have marginal cardiac function after heart transplant or left ventricular assist device implantation.

What is the most interesting case you have ever been involved with?

One of my more memorable cases occurred when I was a resident at University of Texas Southwestern and we performed an EXIT procedure on a fetus with a tumor that was completely obstructing its airway. The imagery from that case has remained with me ever since. As an attending, I honestly find the majority of my congenital cardiac cases to be interesting and highly fulfilling.

What are your interests outside of work, and how do you like living in Southern California?

Outside of work, I have joined the Peloton phenomenon and enjoy doing spinning classes at home. I also enjoy taking my road bike out for rides in the temperate Southern California weather, which I can do year-round. Pre-COVID, I enjoyed international travel, watching professional soccer, and going to concerts. I also enjoy quiet nights at home with my family. Southern California has definitely been a fun adventure for me, as a native Marylander. It is paradise after all.

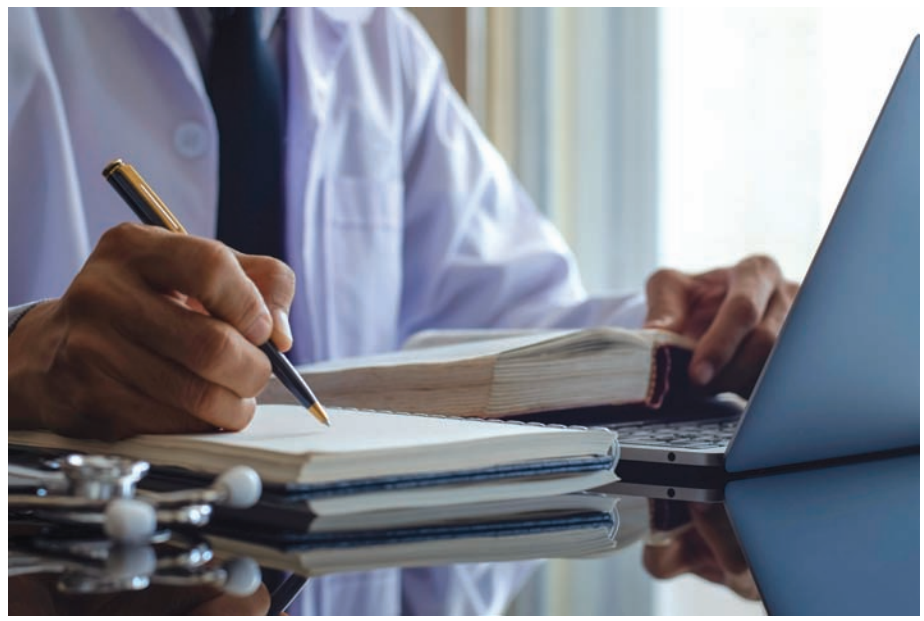
Is there anything else you would like to share with ASA members?

Go, Dodgers! ■

Resident Research Award Guidelines

Deadline for receipt of entries: ***April 5, 2021***

The purpose of the ASA Resident Research Award is to encourage resident and fellow engagement in research and to recognize and reward excellence in original basic, clinical, or population research, as reported in an original, unpublished manuscript.



Eligibility

1. The entrant must be an ASA member at the time of submission. Entries submitted by a principal author who is not an ASA member will not be reviewed. Any co-entrant(s) is not required to be an ASA member.
2. The work reported should have been completed during residency or research fellowship training. Research performed as a student may be considered.
3. Papers should be submitted during or within one year following completion of the training.
4. A previous entry or award does not preclude eligibility.

Submission of entry

1. The entry should be a manuscript describing original basic, clinical, or population research. Case reports, case series, literature reviews, or chapters will not be accepted.
2. The original entry should follow the format (title page, abstract, text, references) of the journal *Anesthesiology* (anesthesiology.pubs.asahq.org/public/InstructionsforAuthors.aspx). Collaborators and co-authors should be listed on the title page. Entries that do not follow this format will be returned.
3. A limit of 25 double-spaced pages (excluding letters of verification but including all figures, tables, and references) will be enforced; manuscripts that exceed the page limit will not be reviewed.
4. Concurrent online submission of an abstract of the work for presentation as a regular scientific paper at the ASA ANESTHESIOLOGY® annual meeting is required (go to asahq.org/annualmeeting/education/submissions. You will be able to access the submission site on this page). Your submission should be prepared in accordance with the rules and deadlines for submission of regular abstracts and submitted independently via the submission link on the ASA website.
5. The work should not have been presented, published, or submitted at any other national meeting, national residents' research or essay contest, or journal prior to this submission. The essay can be presented to local/regional residents' research or essay contests (i.e., Midwest or Western Anesthesia Residents' Conference).
6. The manuscript must be accompanied by a letter, signed by the entrant, stating that the research and writing were predominantly performed by the entrant during residency or research fellowship training and that the work has not been presented, published, or submitted to any other national meeting, national residents' research or essay contest, or journal prior to this submission.
7. The manuscript must be accompanied by a letter from the residency program director confirming the eligibility of the entrant and stating that the work was performed predominantly by the entrant and during residency or research fellowship.
8. Only one submission will be accepted per entrant.
9. Manuscripts and the two letters should be sent electronically as a single, collated, searchable PDF or Word document file to the chair of the Committee on Research, Y.S. Prakash, M.D., at prakash.ys@mayo.edu by April 5, 2021, at 11:59 p.m. CT.
10. Winners will receive their awards at the Celebration of Research session at the ANESTHESIOLOGY 2021 annual meeting in San Diego.

If you have any questions, please contact Rachel Gutterman, ASA Education Department, at **r.gutterman@asahq.org**. ■