

From the President's Desk: In the eye of the brainstorm, 9/16

written by CAP TODAY
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September 2016—Radiolab is a radio show and podcast about (mostly) scientific curiosities co-hosted by a perpetually interested guy who majored in music. You might describe it as a talk show for science geeks. These are people who know how to ask the right questions and put the answers in context. A recent installment (“Colors”) questions whether color is a concrete characteristic of the physical world or simply a mental overlay we apply to our perception. Early on, you learn that a young Isaac Newton pursued the mechanism of color perception by piercing his own eye with a knife. I was hooked.



The guests discuss species-specific anatomical disparities that might inform their inquiry. They note that humans have three distinct color receptors (cones) that lead to seven cone combinations (“seeing” seven colors). In contrast, dogs have only two distinct cones and cannot distinguish red. Obviously, the number of discernible hues is far larger. Sparrows have a broader rainbow, and a butterfly’s visual arc is wider yet. So is color an element of the physical world or a product of our innate perceptual capabilities? Perhaps the answer is indeed in the eye of the beholder.

When my oldest son came to work in our lab one summer, we were surprised to learn that he was colorblind. None of us had a clue beforehand, although I knew from my spouse’s family tree that it was a distinct possibility. We were again surprised two years later when the same thing happened with my second son. Sometimes, we don’t know what we don’t know. Not knowing may or may not be concerning in general, but in medicine it can certainly matter.

Pathologists are trained to keep looking, to build a context broad and deep against which to weigh assumptions and observations. Like the Radiolab crowd, we’re curious. A friend of mine asked random

pathologists when they most enjoyed their work, and many immediately named those moments when they saw the evidence in the slide or the data and the truth emerged. They got it. I get that.

We are a perpetually interested group. So when CNN reported in July that South African scientists had found evidence of malignancy in a 1.7-million-year-old foot bone and of benign cancer in a nearly 2-million-year-old vertebra, I had to know more.

Both cancers were found in hominin skeletons. One of the scientists made a terrific video about the discovery, telling CNN that when they compared the bone against a modern human osteosarcoma specimen, the two appeared to be identical. Perhaps our ancestors developed malignant cancer 200,000 years earlier than we had imagined! When the lead author was interviewed, he saw a teachable moment and seized it (good man!). "Cancer is not a single disease," he said. "It's a continuum."

It's also a stunning challenge to the popular assumption that cancer is principally a modern disease caused or accelerated by lifestyle factors. These cancers were primarily osteogenic. As the authors said, we now have proof of an ancient capacity for malignancy in humans. How can we use this to come closer to understanding how a cancer evolves?

An inclination to be curious could be our best asset in this undertaking. The CAP Pathology and Laboratory Quality Center, launched in 2008 to build a broader, deeper, collaborative context within which to evaluate and improve our approaches to diagnosis and treatment, clearly reflects our forward-looking mindset.

We took a deep dive in founding the Center (doing what we do best, I guess). It was hard work for a lot of people and the benefits have been phenomenal. We had hoped that collaborating closely with other national specialty groups would generate durable, dynamic relationships for all concerned, and it has. The work of the Center is important; it was a heavy lift that elevated us all.

We partnered 10 years ago with the American Society of Clinical Oncology to write practice guidelines for testing HER2 and then ER/PR in breast cancer. The Center was formally announced in 2008 and published its first guideline in October 2011. We've published 10 guidelines to date and 11 more are in progress.

Guideline writing takes about two years and requires intensive research, long meetings, and a lot of give-and-take. That thoughtful process has enabled us to build solid partnerships with ASCO, the Association for Molecular Pathology, and the American Society for Clinical Pathology. We're now forging stronger collaborations with the American Society of Cytopathology, Pulmonary Pathology Society, Papanicolaou Society of Cytopathology, and, most recently, the American Thoracic Society, American College of Chest Physicians, Society of Interventional Radiology, and Society of Thoracic Radiology.

As M. Elizabeth Hammond, MD, the founding chair of the Center, likes to say, guidelines from the CAP Center are living documents. We expect them to be out of date almost before the ink is dry. They remain current and useful because our members and clinical partners are actively engaged in their development and review them routinely. Member comments are read closely and taken seriously; your feedback is what makes it all work. More than once, our panels have reworked a guideline because reviewers asked for clarification. Panel members need your help to ensure that the content is structurally sound, clinically useful, and clearly stated. When guidelines are circulated for comment, please respond.

Please respond, too, when opportunities are announced to get involved in a promising national initiative: the National Cancer Institute Cancer Moonshot. I represented the CAP at a June 28 launch event where vice president Joe Biden asked leaders and participants in cancer research and treatment—from physicians and scientists to patients and venture capitalists—to submit their proposals for projects to accelerate progress in defeating cancer. The goal is to build a reservoir of accessible resources, including more clinical trials, more open databases, and greater transparency across the health care system. I'll keep you posted, but in the meantime, opportunity is in the eye of the beholder. Let's embrace this for our patients.

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Dr. Friedberg welcomes communication from CAP members. Write to him at president@cap.org.



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