

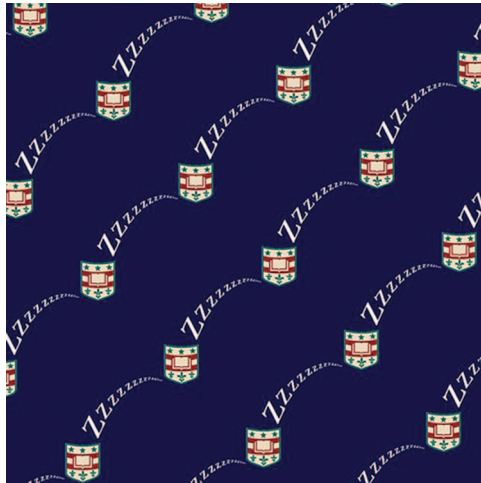
Washington University and the Why of Anesthesiology

THIS issue of ANESTHESIOLOGY celebrates another pioneer department in our specialty, that at Washington University. The goal of this series is to highlight and understand how a culture of excellence in research has been instilled in a department using different approaches in markedly different settings. A year ago, Lars Eriksson described how such a culture was created among mostly physician scientists at the Karolinska Institutet in Stockholm, in an environment of socialized medicine.¹ Now, Alex Evers and William Owens describe how this happened at Washington University, a private medical center in a competitive, fee-based system with a healthy mix of PhD and physician scientists. Many articles from the Karolinska Institutet were clearly translational, with obvious clinical application. Many articles from Washington University are more fundamental, leaving many of us to scratch our heads after reading their titles. In both cases, they reflect a vibrant research community. When Dr. Evers became chairman of the department at Washington University, he created a design to be used for neckties given to visitors. I hear in those Zs a powerful engine of scientific advance, not a boring academic exercise.

I'm currently traveling to Salt Lake City for the American Board of Anesthesiology, where for a week I will question nervous young professionals (candidates, as they're termed) to determine whether they should be certified as consultant physicians in our specialty. I will ask what?, how?, and why? many times, trying to ferret out clinical judgment, level of understanding, and the ability to communicate both. If I succeed, the examination will be sufficiently broad and deep to make a clear determination. At some point during each examination, the candidate will say, "I don't know" regarding what to do or why to do it.

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“I hear in those Zs a powerful engine of scientific advance, not a boring academic exercise.”

PhD scientists into a clinical department to generate outstanding research.² Successful research departments on our specialty all include a mix of physician and PhD scientists, and this is not just for financial reasons. These groups are trained in fundamentally different ways, although both live and function in a scientific worldview. Physicians largely use an inductive method, championed by Sir Francis Bacon, to pull disparate pieces of objective and subjective information together to reach a diagnosis. PhD scientists, on the other hand, largely use a deductive method, championed centuries later by Karl Popper, in which the goal is to design an experiment to falsify or disprove a hypothesis. Physicians are primarily prescriptive in the sense of applying specific treatments given specific presumed diagnoses. PhD scientists are largely experimental in the sense of designing tight control of the environment using custom methods to clearly prove their idea is false. It's no wonder that it takes most physicians who come to my laboratory nearly 6 months to shift their way of thinking such that they design good experiments. And it's no wonder that successful research departments foster communication among physicians and PhD scientists.

This tension between fundamental, usually laboratory-based science and applied, usually clinically based science exists in ANESTHESIOLOGY as it does in all medical science

The depth of understanding provided in many of the articles in this issue goes far beyond what I will expect of a candidate in 2011. This issue has several review articles that may appear esoteric in this regard, with concepts far removed from clinical practice. Perhaps you're asking yourself, "If I understand opioid pharmacology (dose, duration, therapeutic and side effects), why do I care about their molecular interactions with receptors, signaling pathways, or neurobiologic responses below this level?" Each of us must choose the level at which we will say, "I don't know" and move on. These articles provide depth to push that level.

Drs. Evers and Owens describe a toolkit of values and strategies that have worked marvelously at Washington University and that lay the groundwork to integrate

journals. As one of the basic scientists who prepared a review article for this issue said to me, “Before I started writing, I looked through a few issues of your journal. It’s amazing how strong the contrast is between practical information and pretty basic research.” In the past few years we have expanded and will continue to expand content that can immediately guide clinical practice and serve as practical review for clinicians. And we will continue to apply innovations to better translate the importance of basic science work to the busy clinician. But this tension will remain, and we will not stop publishing important, definitive fundamental science that advances our understanding.

I will end with a thank you and an apology. Thank you to Alex Evers and his faculty, who submitted many manuscripts in all sections of the Journal that provide a clear view of one outstanding research environment. My apology is to the physician scientists who authored many of these manuscripts if my comments above suggest I hold them (and me as a phy-

sician scientist) as lesser scientists than those with a PhD degree. Nothing could be farther from the truth. I believe physician scientists uniquely combine both worlds, leading to generation of meaningful questions and solutions to our patients’ problems. Finally, like the candidates, let’s all strive to push back the point where we honestly have to say, “I don’t know!”

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ANESTHESIOLOGY REFLECTIONS

Hart’s Chloroform Analgesia by “Reynolds Obstetrical Inhaler”



According to Lawrence M. Hart, D.O., of Seattle, “no more chloroform” should be added to the “Reynolds Obstetrical inhaler than will be absorbed by the gauze, otherwise a drop of the anesthetic may flow into the patient’s nostril and cause serious discomfort.” With ether or particularly chloroform, obstetrical use of this rabbit-ear-like nasal inhaler (*above*) peaked between 1910 and 1920. According to Washington osteopath Hart, late in the first stage or early in her second stage, a laboring mother-to-be should be prompted to “place the instrument to her nostrils at the beginning of each pain and to inhale as long as the pain lasts.” Dr. Hart considered this analgesic safe for the parturient because “the inhaler will drop from her hand at the beginning of narcosis.” (Copyright © the American Society of Anesthesiologists, Inc. This image also appears in the *Anesthesiology Reflections* online collection available at www.anesthesiology.org.)

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