

# John W. Severinghaus Lecture on Translational Science: ‘Anesthesiology: Resetting Our Sights on Long-Term Outcomes’

**Beverley A. Orser, MD, PhD, FRCPC**  
**Sunday, October 4, 2020**  
**Noon-1 p.m. CT**

**D**r. Beverley A. Orser became interested in becoming an anesthesiologist when she had the opportunity to work in underserved medical environments in the West Indies and in rural parts of Canada. There, she saw how patient care is impacted by inadequate anesthesia services.

As she built her career, Dr. Orser focused on understanding the science of safety as it relates to the specialty of anesthesiology. In her clinical studies, she worked on patient safety, especially by designing health care and drug delivery systems to be as safe as possible.

“It’s the notion of always remaining highly committed to the acute needs of the patient who is under your care – but you also see that our horizons now are evolving to much longer-term outcomes — not only of our patients, but also of our health care system,” Dr. Orser said.

The Severinghaus Lecture honors Dr. John Severinghaus, a pioneer in our field who performed groundbreaking research on anesthesia patient monitoring, respiratory physiology, blood gas transport, and high-altitude acclimatization. The ASA is pleased to welcome Dr. Orser as this year’s lecturer. She is one of anesthesiology’s most renowned physician-scientists, as well as a passionate patient safety advocate and an academic leader on the local, national, and international stage.

Dr. Orser’s Lecture is titled “Anesthesiology: Resetting Our Sights on Long-Term Outcomes.” In her talk, she will review several transformative discoveries that helped establish the specialty of anesthesiology. This discussion will set the context for asking, what next? How do we chart our future as anesthesiologists?

“We need to build for the future – and that starts now. We need to think about how best to serve our patients as a specialty, particularly as our technologies and knowledge evolve. How do we best utilize



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our talents, resources, and innovations to improve patient outcomes?” Dr. Orser said. “As a specialty, we are appropriately moving away from the single focus of administering care to the individual patient, which will always be our core duty and commitment. But now we’re beginning to understand the role of anesthesiology and pain medicine in the long-term outcomes in our patients and the long-term outcomes of the national health care system.”

Dr. Orser is currently Professor of Anesthesia and Physiology at the University of Toronto, a clinician-scientist and practicing anesthesiologist at Sunnybrook Health Sciences Centre, and a Co-Director of the Perioperative Brain Health Centre in Toronto. Her research focuses on patient safety and also understanding the molecular mechanisms that underlie the desired and adverse effects of general anesthetics.

Dr. Orser oversees a laboratory that has the mission of gaining mechanistic insights that will translate into impactful advances in patient outcomes. She and her

team aim to identify molecular targets for anesthetic drugs and to understand how changes in receptor function underlie the behavioral effects of these drugs.

“We’ve been trying to understand how anesthetics modify the brain to cause the desired effects that allow patients to tolerate surgery. We also want to understand the undesired effects that often occur, including some of the long-term consequences not only of the drugs, but also of the inflammatory injury that patients experience because of the underlying illness or surgical trauma,” Dr. Orser explained. “We have identified a group of receptors in the brain with novel and very interesting pharmacologic properties. Over the last few years, we’ve been working to understand the role of these receptors in health and disease. Through the use of various anesthetic drugs, we’ve discovered a whole new class of receptors that we can target for potential new therapies, but we’re also learning about the role of these receptors in a variety of cognitive disorders.”

In her lecture, Dr. Orser will provide examples to illustrate how the perioperative period represents an unparalleled opportunity to understand the biology of disease and to develop new treatments.

“We now have some very interesting databases that are capturing perioperative patient experiences, and we are using that information to understand the long-term outcomes of those patients as they relate to disorders like post-op cognitive performance, acute pain, and the development of chronic pain. Finally, we need to support the ability of patients to get back to functional life, which is their main goal,” Dr. Orser said.

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Dr. Orser co-founded the Institute for Safe Medication Practices Canada, the first Canadian reporting system for medication errors, and the Patient Safety Committee of the Canadian Anesthesiologists’ Society. She also chaired the Canadian Standards Association Subcommittee on the Labeling and Packaging of Drugs and helped to develop a tool that can be used to assess drug hazards in the operating room. Her recent efforts have been directed toward the implementation of safety checklists for patients undergoing surgery and improving drug safety standards internationally.

“I think the next big event is moving beyond seeing our commitment and our interactions as being limited to the immediate perioperative time. We are looking now at the long-term consequences of what we do during the immediate perioperative period, and how that care has the ability to influence the long-term outcome of the patient. I think the potential to affect long-term outcomes is really a key insight that has been gained in the last few years, which is propelling the specialty forward.” ■

Register for ANESTHESIOLOGY 2020 to be a part of this year’s John W. Severinghaus Lecture on Translational Science on October 4, 2020. [asahq.org/annualmeeting](http://asahq.org/annualmeeting)