



## **NABT Position on the Integrity of Science**

The principles and theories of science have been established through repeated experimentation and observation. The ongoing procedures and processes of science are well-defined within each scientific discipline, including biology. Discoveries and accepted knowledge have been refereed through peer review before general acceptance by the scientific community. As new data become available, previous scientific explanations are revised and improved or rejected and replaced. Materials, methods, and explanations that fail to meet these ongoing tests of science are not legitimate components of the discipline and, therefore, must not be part of a science curriculum.

Scientific principles and practices do not include materials or theories derived outside of the scientific processes, nor does it support disinformation campaigns that attempt to undermine the principles under which scientific inquiry operates and cast doubt on conclusions derived through the scientific enterprise.

Science is but one way of making sense of the world, with consistent methods and principles that are consensus-driven and well-described. Among these principles is the notion that proposed causes and explanations must be natural. The credibility and utility of all science, including life science, depends on maintaining its integrity. Any attempt to mix or contrast supernatural beliefs and natural theories within science misrepresents the scientific enterprise and debases other nonscientific ways of knowing. These attempts, whether they result from a misunderstanding of the nature of science or through a deliberate attempt to delegitimize science, have no place in science or in the science classroom or laboratory.

Biology teachers are no strangers to controversies, and the history of NABT has found us in constant defense of science and its methodologies and practices. This is particularly true in an age when “fake news,” “alternative facts,” and disinformation campaigns disrupt our common understanding and shared sets of “facts.” In an age when the “appearance of neutrality” is advanced as a justification for the avoidance of fact-checking in order to encourage the portrayal of false equivalence among competing arguments, society as a whole is bombarded with misinformation designed to delegitimize the principles under which scientific inquiry operates and undermine conclusions derived through the scientific enterprise.

Efforts to cast doubt on the science of climate change and the process of evolution are no more valid today than were past campaigns that attempted to downplay the deleterious health effects of tobacco use or the benefits of immunization for individuals and society. NABT members know that science denialism undermines all of science with dramatic and harmful effects.

The mission of NABT is to empower educators to provide the best possible biology and life science education for all students. As the nation’s leading professional association for life science educators, we encourage teachers to be mindful of organizations propagating science denialism that have either a political or financial stake in undermining the confidence in and

credibility of science. Some of these groups produce very professional-looking and very deceiving curriculum tools which are made available to educators at no or low cost. Teachers must recognize these materials as misinformation and resist using them as if they were legitimate instructional materials. NABT, working with partner organizations, will monitor and respond to these anti-science disinformation campaigns as well as legislative efforts that undermine the teaching of legitimate, fact-based science.

Biology educators must work to encourage the development of, and support for standards, curricula, textbooks, and other instructional frameworks that prominently include the practices of science and its mechanisms and that refrain from confusing nonscientific with scientific explanations in science instruction. They must teach biology in an effective, detailed, and scientifically and pedagogically authentic manner, both in classroom discussions and in laboratory investigations. More importantly, they must develop within students the ability to describe evidence that supports the scientific principles that are the focus of their study and are instrumental to our current understanding of the mechanisms of science.

***Revised and adopted by the NABT Board of Directors in January 2024. This position supersedes and replaces all previous NABT statements on scientific integrity.***