

NEH Supports “Engineering Safety into U.S. Firearms: 1750-2010” Research at the Center for the Study of Guns and Society

In America, firearms are widely discussed through the lenses of laws and ownership, gun violence statistics, and the contested history of the right to bear arms. Firearms are designed to kill. They also can endanger the lives of the operator and bystanders.

In 2020, the Centers for Disease Control and Prevention reported that more than [45,000 people died from gun-related injuries](#) in the United States, suicides, homicides, and unintentional firearm injuries.

“While efforts to make firearms safer to use have long been integral to their design—from the introduction of trigger guards to electronic locking systems—the story of the evolution of firearm safety mechanisms is an important and mostly neglected story in the history of technology and culture,” explained Jennifer Tucker, professor of history and director of the Center for the Study of Guns and Society at Wesleyan University.

As the recipients of a \$149,563 National Endowment for the Humanities (NEH) grant, Tucker and Dr. Stephen Hargarten, M.D., MPH, professor of Emergency Medicine at Medical College of Wisconsin, will explore and analyze the ways manufacturers have improved the safety of firearm productions and munitions in the U.S. since the 1750s. Titled “Engineering Safety into U.S. Firearms, 1750-2010: Inventions, Manufacturers, Outcomes, and Implications,” the project aims to deepen the understanding of a critical contemporary social and cultural issue affected by technology: the growing number of injuries and deaths related to gun possession and use.

“There have been many excellent studies on American corporate involvement in gun manufacturing, but the story of the technological development of firearms as engineering artifacts is little known outside of collectors and manufacturing magazines,” Tucker said. “The technological evolution of firearms as engineering artifacts remains largely uncharted territory. Our study seeks to change that narrative.”

The NEH grant, awarded in August, is one of 16 “[Dangers and Opportunities of Technology \(DOT\): Perspectives from the Humanities](#)” grants awarded nationwide. The DOT program supports research that examines technology and its relationship to society through the lens of the humanities, with a focus on the dangers and/or opportunities presented by technology.

While materials focused on human behavior are of great interest to this study, Tucker and Hargarten want to better understand the nature of attempts to make firearms safer through product design; whether they’re designed to reduce accidental injuries and deaths to their users (e.g. trigger guards), or introduced to the market with the idea of reducing harm to the general public (e.g. through personalized identification devices, such as smartgun technology, that restricts use to verified users).

The researchers will investigate and collect information from historical online patent records, including initial identification of important technological developments and their entry into a historical database. Thousands of such patent applications have been filed in the U.S. and Britain for firearm safety product inventions from the 1700s to today. These include, for example, the introduction of doglocks in the early 1700s; grip safeties introduced by Smith & Wesson in the 1880s; loaded chamber indicators in the 1920s; drop safety technology in the late 1960s; and smart gun technologies introduced by Sandia Labs in Los Alamos, New Mexico in 1995 (Weiss et al 1995). They also include design models for storage containers, anti-theft devices, and smartphone technologies.

Hargarten, who also serves as the senior policy and injury science advisor for the [Comprehensive Injury Center at MCW](#), has already led a study that focused on how the kinetic energy of a bullet relates directly to its wounding potential.

“This new study provides us support to systematically attain valuable information about the history of firearm safety patents,” he said. “One can only look to the automobile and its history of safety designs that began in earnest in the 1960s and see the benefit of safer cars, leading to fewer injuries and deaths. We hope that our study will inform firearm safety and potentially lead to a similar outcome of fewer deaths and injuries.”

The two-year scholarly investigation is hosted at Wesleyan University within the [Center for the Study of Guns and Society](#), which was established in 2022 with the aim of fostering historical research on firearms in culture and strengthening academic and museum collaborations. The collaboration will result in publications, presentations, brainstorming workshops, conferences, and more throughout the period of study.

Tucker also will recruit three undergraduate student research assistants at Wesleyan to help organize resources and collect and interpret additional data for the study. In addition, students enrolled in [Wesleyan’s Quantitative Analysis Center](#) (QAC) classes already performed preliminary data management, modeling and interpretation, gain domain expertise in gun technology research, and tailor computational methods preparatory to research opportunities in the project.

“It’s important to involve students as this experience will provide them with a unique opportunity to contribute to meaningful research,” Tucker said.

Tucker and Hargarten expressed gratitude to the [NEH](#) for funding their “Engineering Safety into U.S. Firearms, 1750-2010” project. “We are humbled and inspired to be part of the group of recipients and awards this year,” Tucker said. “We look forward to exploring this important topic, which not only focuses on the dangers of firearms, but also highlights the potential opportunities for positive change that arise from technological advancements.”