

# Novel innovation could allow bullets to disintegrate after designated distance, help prevent collateral damage

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Stray-bullet shootings are an often-overlooked consequence of gunfire that can cause severe injury or death to bystanders, or collateral damage

victims in the military. A novel technology being developed at Purdue University could help prevent these incidents.

A research group led by Ernesto Marinero, a professor of materials engineering and electrical and computer engineering has developed novel materials and fabrication that could allow a bullet to become non-lethal and disintegrate after a designated distance. The [technology](#) was built out of a need for a safer bullet that will significantly reduce [collateral damage](#) and [injury](#) in law enforcement, military and civilian sectors.

Conventional bullets retain a significant portion of their energy after traveling hundreds or even thousands of meters. The Purdue-developed innovation enables the bullet to disintegrate over a predetermined period due to the heat generated during firing in conjunction with air drag and an internal heating element. The heat conducts through the entire [bullet](#) part, melts the low temperature binder material, and encounters drag forces, which causes disintegration.

This technology combines the stopping power of standard bullets, the shrapnel-eliminating benefits of frangible bullets, and a limitation of range to decrease potential bystander injury or death.

The Purdue Research Foundation's Office of Technology Commercialization has patented the technology, and it is available for license.

Provided by Purdue University

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