

www.gtdscientific.com



SCIENTIFIC

When violence occurs and fingers are pointed,
we find out what *really* happened.



About *GTD Scientific*

Who we are

We are a dedicated and experienced team of biomechanical engineers, led by Dr. Geoffrey Thor Desmoulin. We use science and state-of-the-art technology to prove what happened during crimes and incidents causing injury. GTD conducts investigations across North America.

Who we help

We work with people who are interested in finding out as much as possible about any event that led to injury or death. Our clients include legal professionals, police departments, safety product companies, security contracting companies, engineers, and health professionals.

Contact *Us*

admin@gtdscientific.com
+1.604.842.4831

What we do

The GTD FORENSIC INVESTIGATIONS TEAM have developed unique solutions to see inside fact patterns, objectively fill information gaps and extract critical data. We apply professional engineering problem solving such as biomechanics, modeling, photogrammetry, free-body diagrams and an advanced arsenal of testing technologies and reconstruction techniques to determine injury causation. We report our findings to legal and law enforcement professionals and – when called upon – testify as an expert witness in the court of law.



Our SCIENCE OF VIOLENCE TEAM® have launched and are continuously adding to a ground-breaking series of online courses, webinars, training videos and custom in-person training options. Driven by real-world case studies, the Science of Violence® courses help legal and law enforcement professionals to better understand how biomechanics, physics and injury analysis can improve their investigation and litigation of violent encounters and use of force incidents.

Our RESEARCH & TRAINING TEAM specialize in product safety analysis and the creation of new knowledge in our area, that we distribute through continuing education and professional development. Dr. Desmoulin, a former Adjunct Professor at the University of British Columbia, and the team at GTD have authored over 42 technical papers, and our cutting-edge research projects are often undertaken in partnership with leading universities, scientists and law enforcement experts.

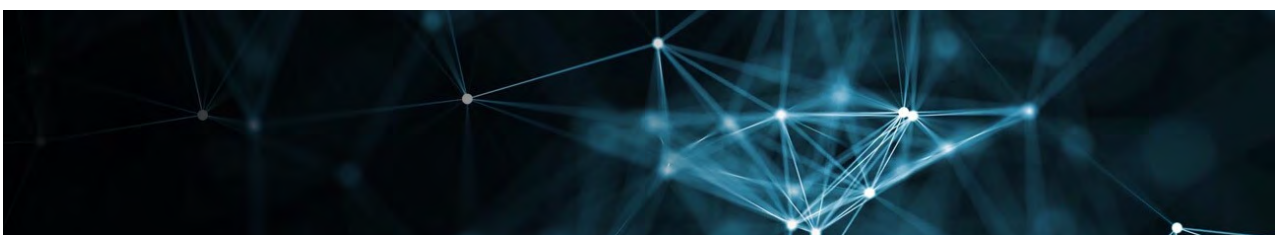




Who is Geoffrey Thor *Desmoulin*?

Geoffrey Thor Desmoulin, Ph.D., R.Kin., P.L.Eng., is the Principal at GTD Scientific Inc. Geoffrey has two degrees in Kinesiology and two in Engineering, giving him a unique skill set for understanding human injury from a biomechanical perspective. He combines this with firsthand encounters with injury as an emergency medical technician, firefighter, Karate black belt and the former engineering expert on Viacom's hit TV series, *Deadliest Warrior*.

Most importantly, when finding answers Geoffrey draws on over fifteen years of practical, hard-earned experience gained while investigating a wide range of criminal and civil cases, as well as research projects that enabled Geoffrey and the team at GTD to further expand their knowledge base.



We are more than *qualified*

Dr. Desmoulin is:

- A Qualified Expert in Biomechanics, Biomechanical Engineering, Biomechanical Testing, and Biomechanical Incident Reconstruction in various U.S. Federal Courts, including the Eastern District of Pennsylvania, 9th District of California, District Court of Delaware and the Supreme Courts of both British Columbia and the Yukon.
- An engineer licensed by the Engineers and Geoscientists British Columbia: #158397.
- A practicing member of the British Columbia Association of Kinesiologists: #2012080.
- An appointed Honorary Lieutenant-Colonel (D45 862 697) to the 39 Signal Regiment (UIC 6710) by National Defence Headquarters Director General Military Careers in Ottawa (May 25, 2015 – May 24, 2018).
- A former Adjunct Professor at the University of British Columbia (UBC). Duties included development of an Injury Biomechanics class and assisting with the development and implementation of UBC STAR Survive and Thrive Applied Research Initiative.
- Licensed for the Possession and Acquisition of Restricted Firearms License # 13295786.0002.



Over *15 years*
of hands-on
experience

and *hundreds*
of case files
solved



We *specialize* in...

OFFICER INVOLVED INCIDENTS: An area of specialty for GTD are officer involved use of force incidents. After working on multiple cases for the City Attorney of San Diego, Geoffrey received a glowing recommendation. Geoffrey has since applied his unique skill set to help bring a broad range of events to a successfully litigated conclusion. He has conducted extensive studies on tasers, batons and belt gear, and is a licensed ASP-certified baton and restraints instructor trainer. The team at GTD are experts at visual scene documentation that can extract critical force, position, and timing data from low light dash, body and security cameras through inverse photogrammetry and reverse projection techniques. By matching data to the injuries, GTD can explain the incident from the inside and support our findings with hard evidence that carries weight with jurors, judges and opposing counsel.



CRIME INVESTIGATION & LITIGATION: GTD have assisted numerous active police cases with investigations that resolve conflicting accounts or reveal a completely new version of events that is supported by the facts. Most cases have unique and challenging elements that often make little sense before testing and analysis. Unexplained wounds, impossible bullet paths, improbable body positions and gaps in critical information are just some of the things we regularly contend with. When stabbings, shootings, beatings and testimonies simply don't add up – GTD are experts at getting to the truth that fits the facts.

SPORTS & TRAINING INCIDENTS:

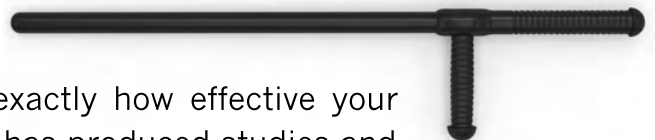
A particular area of expertise for GTD are sports and training incidents involving not only professional athletes, but also practiced amateurs of high-risk activities. We can apply our research, techniques and analysis to provide insight on equipment failures, on-field incidents, and injuries that occur during training for activities like self-defence or boxing. GTD has performed multiple successful investigations that lend added weight to cases involving contact sports, gym equipment, and training devices.



VEHICULAR DYNAMICS & COLLISIONS:

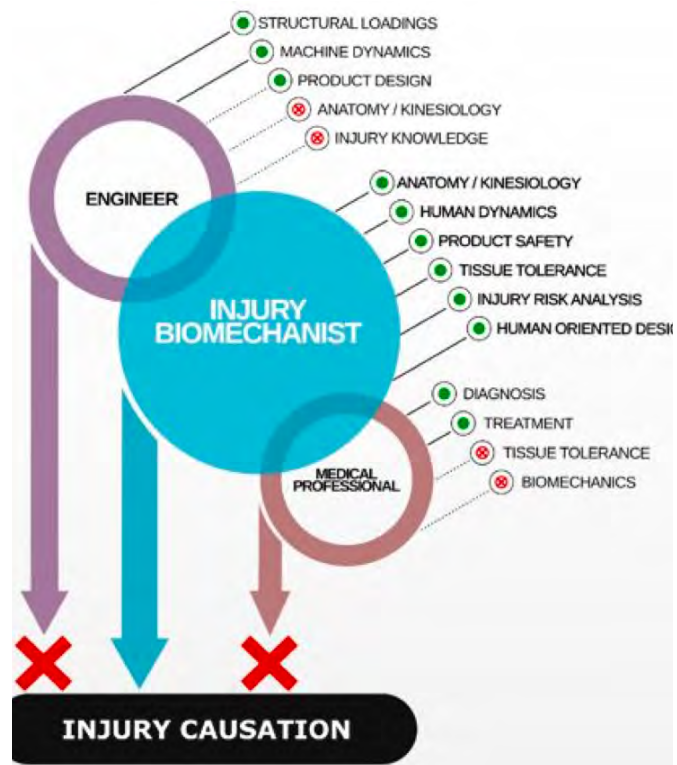
GTD have investigated force and injury for just about every imaginable collision combination of cars, trucks, motorcycles, boats, planes, bicycles and pedestrians. It's not always just about two objects colliding though: Shots fired through a window of a moving vehicle have a significant influence on what occurs next during the incident and why. When there are questions regarding location, speed, direction, and impact, we will find the answers. By combining injury analysis with physics the team at GTD have provided critical findings and insights for all of the vehicular cases we have investigated.

PRODUCT SAFETY: When you need to know exactly how effective your safety product is, GTD is your first choice. GTD has produced studies and design insights on everything from energy-absorbing body armor to improved police batons, and blast mitigation devices for ballistic shields.



What makes us *unique*

There are many top-notch forensic engineering firms who provide fantastic work on technical aspects like structural loads, energy dynamics and scene scanning. But, the investigation moves beyond a typical engineer's area of expertise when the forces lead to human injury. Without experience in anatomy, kinesiology and wound analysis, mistakes are easily made when measuring against injury-specific fact-patterns.



On the opposite end of this spectrum, medical professionals can provide a diagnosis of injuries and understand how to treat them. Hence, typical testimony for these experts revolves around medical malpractice and cause of death, but not cause of injury. These same experts rarely understand how to combine medical prowess with physics to achieve informative biomechanical testing or interpret reconstruction of an injurious event. Courts are increasingly acknowledging the need for multi-disciplinary knowledge, beyond that of the medical professional, in order to link an event to the documented.

GTD have expertise that spans engineering mechanics and knowledge of anatomy and physiology to understand the medical diagnoses so that injury causation and biomechanics of an event can be determined. We understand the wounds as well as the engineering parameters like timing and the effect of applied forces that may have caused them. We can then meticulously test against that framework – and because we understand both cause and effect – we find answers others miss.



Science of Violence®

COURSES & TRAINING



The Science of Violence® is a series of courses developed by renowned biomechanical engineer and kinesiologist Dr. Geoffrey Thor Desmoulin and the team at GTD Scientific Inc. Using real-world case studies, The Science of Violence® provides unique insight into how science can prove what really happened when the truth is hard to find.

Courses are available in one-hour, three-hour and one-hour “deep-dives” which create a modular format that allows you to customize your learning to your needs. Sign up now, and complete the course at your convenience, to gain a foundation that will help you to better manage crime scenes, investigations, injury analysis and expert witnesses.



This training will provide you with invaluable information to take your force investigation to the next level – it's a must for investigators, prosecutors and police defense attorneys, especially in today's environment.

- Anthony Polse, Maricopa County Attorney

Geoff is extremely knowledgeable and highly adept at explaining high level concepts in an understandable manner. Students can rest assured that they will be able to immediately apply what they learned in real time in the real world.

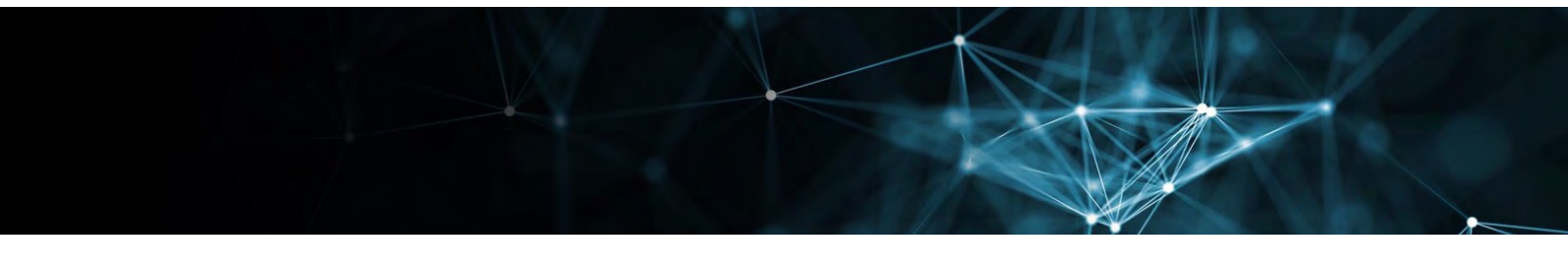
- Scott Buhrmaster, CEO, Calibre Press

This was a great course that connected theory with practice. Clear, concise and exhibits with an attention to detail rarely seen, even among professionals.

- Dennis Rovere, Court Qualified Expert

The first time I heard you publicly present on your company was on February 1, 2017. I then invited you to present to the entire San Diego Police Department Homicide Team.

- Dan Andrews, Principal Investigator, City of San Diego





WHAT OUR *CLIENTS* ARE SAYING

"I have no doubt that your review, testing, documentation, investigation, report and findings were instrumental in our securing the 3rd degree murder plea."


- Jarrett Ferentino,
Assistant District Attorney,
Lucerne County

"Dr. Desmoulin's attention to detail and the thorough analysis that he undergoes before forming his opinion results in a report that is very difficult to challenge, which is the difference between winning and losing in many cases."

- Ms. Marlisa Martin,
Nanuq Law Corporation

"Dr. Desmoulin has performed shooting and accident reconstructions for the City. He has testified as a key witness in court on behalf of the City. He is able to effectively communicate complicated matters to our staff and members of the jury. I have always found Dr. Desmoulin's work to be of the highest quality."

- Dan Andrews, Principal Investigator, City of San Diego



"Dr. Desmoulin's ability to present complex information to the lay, clinicians and scientists alike whether written or verbal is superb."

- Dr. Aslam Khan, KKT International



I strongly recommend Geoff as a biomechanical engineering expert. He is as energetic as he is bright - a lethal combination.

- Daniel Jeck,
Eisenberg, Rothweiler, Winkler, Eisenberg & Jeck



Our trusted *partners*

