

## Written Testimony

**OPPOSE: Senate Bill 208 and House Bill 302**

**SUPPORT: Senate Bill 198**

**February 5, 2020**

**Chuck Farmer  
P.O. Box 1404  
Frederick, Maryland 21702**

**Thank you for allowing me a chance to voice my concerns about the Senate bill listed above and the proposed legislation.**

**This is a critical issue to my family, our community in Frederick County, our State here in Maryland and our Country.**

**My name is Chuck Farmer. I'm a single father raising two children and have raised one other who became a Frederick City Police Officer. Two of my children attended the same Elementary school that I did at their age in Frederick County and I have witnessed many changes over the past 40 + years. I try to instill in them to appreciate how precious our rights are as citizens and the importance of protecting those rights when threatened. This Legislation if passed is sure to endanger their futures and immediately devastate their daily lives and activities.**

**My oldest son now 24 years old could not be here today, however he understands and has witnessed firsthand the importance of our Freedom and has developed a strong appreciation for the rights we have as citizens. This was instilled in him while he traveled as a U. S. Sports Ambassador to Austria when he was 11 yrs old and as a U.S. Student Ambassador to China in 2008 - which was a stark reminder of how important our Freedoms are! He works full time, operates his own businesses and is seeking a career in Law Enforcement. My now 16-year-old daughter is a member of the Explorer's Post 1218, past President of the 4-H Frederick County Shooting Sports Program, volunteers at a fire department and is pursuing education in law enforcement.**

**My youngest son is 14 and participates annually with many of his peers in the "Youth Day" waterfowl hunt on the Eastern Shore- the same place where he successfully harvested his first duck and goose. All of my children routinely practice responsibility with the use firearms, understand the importance of them and the safety of firearms use.**

**I am a retired Inspector from the Maryland State Police and have enjoyed trying to make a difference during my state employment, but would not trade the time with my children for anything! As a family we spend time in many activities with church, schools, sports, scouts, FFA and 4-H where my children are members and share responsibilities with many other youth members.**

**In 2012 we helped develop a 4-H Shooting Sports Program for the youth in Frederick County and is part of the State and National program. The purpose is to develop Life Skills in young people ages 8-18 using trained volunteer Adult Leaders and Instructors. College Scholarships are also available until age 24 and are sought by many of our youth. In an educational and safe venue, our youth learn firearm safety , train and participate in Local, State and even National Competitions in 6 different disciplines including Archery, Muzzle Loading, Rifle, Pistol, Shotgun and Hunter Education. The Life Skills required for responsible firearms use such as respect, self-control and discipline, carry over into many other aspects of life.**

**Young people have a natural curiosity about firearms and firearm education is the best way to reduce gun accidents! In the first year our club enrolled almost 100 youth members and was able to reach over 5,100 youth with firearms safety! 1,540 Maryland Youth participated in 4-H Shooting Sports Clubs last year, 650 youth were involved in MD 4-H Shooting Sports special interest programs, 1,400 youth experienced Shooting Sports through 4-H Camp experiences and I am one of 150 trained active instructors in Maryland and one of 17 trained Instructors in Frederick County. Last year 15,000 4-H Volunteer hours were dedicated to teaching youth in Shooting Sports and Firearm Safety.**

**With "Safety" built into the program, our "Firearm Safety" record speaks for its self with ZERO accidents.**

**For your review, I've attached a copy of the most recent article of National "Journal of Extension" and an email with State 4-H Shooting Sports statistics from last year from our Maryland State Coordinator. Both documents help detail and explain the importance of the 4-H Shooting Sports Program with some statistics and diagrams from our training which emphasizes the importance and goals of our program in Maryland and Nationally.**

**I am also currently the Maryland State AIM Director. AIM is the youth program for the ATA (Amateur Trapshooting Association) which not only has a long rich history in our Country, but is recognized and has members worldwide. The "AIM" acronym stands for Academics, Integrity and Marksmanship.**

**The AIM program is for any youth up to age 24 with 4 main age groups. AIM shooting consists of mainly Trapshooting, but also includes shooting opportunities such as Skeet, Sporting Clays, Rifle, Pistol, 5 Stand and 3-Gun competitions. Membership in AIM consists of youth who may also be members of other youth shooting organizations too including Scouts, 4-H, High School Clay Target program, FFA, High School Rodeo, Scholastic (SCTP), Isaac Walton Leagues of America (IWLA) ROTC teams or many other organizations youth programs sanctioned by various sporting clubs.**

**All of these organizations have an excellent safety record and share many of the same goals. Our youth come from all walks of life. They are rural, urban and are from any race. They are male and female (females often outperform males). They are rich and poor. One of the best aspects of our shooting sports programs is that our youth shooters represent nearly every facet of Maryland's society without prejudice. Even a child confined to a wheelchair can equally participate and excel in shooting sports.**

**The many volunteers of our programs realize the true rewards and importance daily especially when we witness the youth members grow to be productive members of society. Many former members are pursuing careers in the US Military, Law Enforcement, Fire Fighting, First Responding and Teaching. Some have returned from college to become Instructors in our own program.**

**Many of our programs share or borrow equipment when needed too- including firearms even from a different organization. Many youth come from families who are limited in financial resources. Many would not be able to participate if unable to use or borrow equipment or firearms when needed. Coaches would not be able to lend firearms to families without means. This is obviously discriminatory towards families that cannot afford their own firearms or equipment.**

**If another Instructor could not borrow a firearm to conduct a practice, competition or to use for a youth hunt it would defeat the purpose. If this logic were applied to any other sport it would be a disaster. Think of the impact that would have on a ball team if a needed soccer ball could not be used at a match, because the coach who owned the ball was not present.**

**I believe Senate Bill 208 and House Bill 302 would have an obvious detrimental effect on all of our youth Shooting Sports Programs and ultimately the safety of all of our youth and citizens will suffer most. Should this happen my family will be forced to move from Maryland, the very State we were born and have lived all of our lives!**

**Since the strict handgun laws were enacted in Maryland, many gun shops have closed or refused to deal with handguns, yet the handgun crime rate has sky rocketed- especially in Baltimore.**

**No one wants crime and the statistics do not support long guns being the tool of choice for criminals. Education is one of the most effective measures to reduce crime. The Eddie Eagle Gun Safe Program in elementary schools is an effective and proven remedy. Concealed carry permits issued to law-abiding citizens is also a proven deterrent to criminal activity.**

**Please vote AGAINST Senate Bill 208 and House Bill 302.**

**Please SUPPORT Senate Bill 198.**

**Thank You,**



**Chuck Farmer**

## 4-H Members and Firearms: The Case for 4-H Shooting Sports (1)



### The Instructional Focus of 4-H Shooting Sports

1. Life Skill and Positive Youth Development (PYD)
2. Training Adults to Teach Kids
3. Teaching the First Shot
4. Safety
5. National 4-H Mission Mandates - Healthy Living, Citizenship, STEM



### Safety Record of 4-H Shooting Sports (2)

1. Reach 338,621 4-H age youth per year (2014)
2. About half in short-term experiences, i.e. camps or fair
3. About half in long term community club experiences
4. The program began in 1980
5. More than 6 million youth have been reached
6. Four documented injuries requiring emergency medical attention (1980-2013)

## Youth Sports Injury Data

Sport	2014 Total Annual Participation	Number of Injuries Annually (2013)	Injury Rate
Football	5,286,000	354,300	6.7%
Wrestling	805,000	38,900	4.8%
Basketball	9,694,000	359,300	3.7%
Softball	2,622,000	53,000	2.0%
Soccer	9,828,000	171,000	1.7%
Baseball	6,711,000	106,100	1.6%
Hockey	743,000	11,200	1.4%
Gymnastics	2,809,000	33,000	1.1%
4-H Shooting Sports	338,621*	0.12**	Less than 0.00004%

\* 2014 enrollment

\*\* 4 injuries from 1980 - 2013 \* 6 Injuries in 38 Years

## Youth Sports Injury Comparison



1. Soccer vs 4-H Shooting Sports
  - 42,500 times more likely to be injured
2. Football vs 4-H Shooting Sports
  - 167,500 times more likely to be injured
3. 4-H Shooting Sports is one of the safest activities for youth

## Rationale for Introducing Youth to Firearms



1. Teach safe and responsible use of firearms
2. Significant adults in the life of a young person
3. Opportunity for quality family involvement
4. Positive peer groups for kids
5. Respect the power of firearms and archery equipment
6. Education that emphasizes respect of other people

## The Goal of 4-H Shooting Sports



The goal is not to claim Olympic gold medals.....

But to create "Gold Medal" kids!



**February 2019**  
**Volume 57**  
**Number 1**  
**Article # 1COM2**  
**Commentary**

Commentaries conform to [JOE submission standards](#) and provide an opportunity for Extension professionals to exchange perspectives and ideas.

## 4-H Members and Firearms: The Case for 4-H Shooting Sports

### Abstract

As events of human violence emerge on the national stage and as individuals raise concerns about youths having access to firearms, it is important that Extension professionals, land-grant university administrators, and university legal counsels understand the guiding principles of the 4-H Shooting Sports program. This commentary addresses 4-H Shooting Sports program priorities and program management, the program's safety record, and the rationale for introducing 4-H members to firearms. The article is not a defensive justification of the 4-H Shooting Sports program. Instead, it is a demonstration of the relevance and safety of a 4-H program area that reaches hundreds of thousands of young people each year.

**Keywords:** [shooting sports](#), [positive youth development](#), [safety](#), [program management](#), [instructor development](#)

**Jeff Goodwin**  
 State 4-H Leader  
 Department of Family  
 and Consumer  
 Sciences  
 University of Hawai'i,  
 Mānoa  
 Honolulu, Hawaii  
[jeffg3@hawaii.edu](mailto:jeffg3@hawaii.edu)  
[@JeffGoodwinHI](#)

**David J. White**  
 4-H Youth  
 Development  
 Specialist  
 Oregon State  
 University  
 Redmond, Oregon  
[david.white@oregonstate.edu](mailto:david.white@oregonstate.edu)  
[ate.edu](#)

**M'Randa R. Sandlin**  
 Assistant Researcher  
 Department of Tropical  
 Plant and Soil Sciences  
 University of Hawai'i,  
 Mānoa  
 Honolulu, Hawaii  
[msandlin@hawaii.edu](mailto:msandlin@hawaii.edu)  
[@PIECenterHawaii](#)

### Situation

The 4-H Shooting Sports program, which includes projects in archery, hunting skills, muzzle-loading firearms, pistol, rifle, shotgun, and western heritage, is one of the largest and safest 4-H programs. According to Conrad Arnold, program coordinator of National 4-H Shooting Sports, the program was established nearly 40 years ago and now engages 428,000 young people per year (C. Arnold, personal communication, November 26, 2018). Approximately half of these participants are involved through short-term experiences, such as camps and fairs, and the other half are part of long-term, more extensive experiences in 4-H club

environments (C. Arnold, personal communication, November 26, 2018). When incidents involving firearms make the news, university legal counsels and others may question Extension administrators about 4-H's involvement in shooting sports. It is essential for Extension personnel to be able to explain why 4-H uses firearms as an educational, recreational, and competitive means for promoting positive youth development (PYD). Herein, we provide information pertinent to such an explanation as well as the rationale for the importance of the 4-H Shooting Sports program.

For decades, instruction on the safe and responsible use of archery equipment and firearms has been an effective educational tool in various Extension outreach and engagement initiatives. Examples of the foci of such programming, as identified through peer-reviewed documentation, are engagement of hard-to-reach youths (Sabo & Hamilton, 1997), 4-H camping program activities (Hines & Riley, 2005), spring break activities for youths (Gillespie, 2006), life skills development (Leggette, Lawrence, Merten, & McGuill, 2013), promotion of risk management related to firearm transportation and storage (White & Smith, 2014; White & Williver, 2014), online volunteer orientation (Culp, Hance, Reynolds, & Bentley, 2016), and training and certification of coaches (Martin & Kaufman, 2017). These examples demonstrate that 4-H Shooting Sports programming is a key component of 4-H at local, state, and national levels. Indeed, the safe and responsible use of firearms is an outcome measure in the National 4-H Common Measures instrument (Lewis, Horrillo, Widaman, Worker, & Trzesniewski, 2015). Furthermore, Hill and Goodwin (2015) have documented the positive economic contribution of 4-H Shooting Sports at the local and state levels.

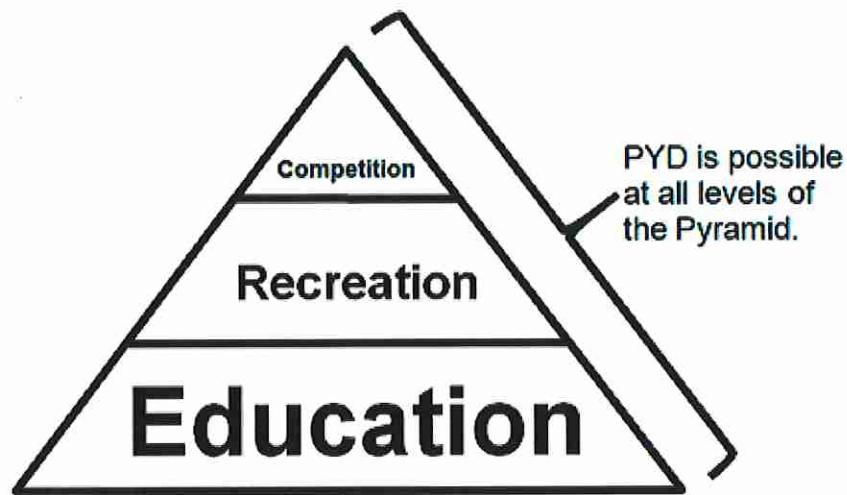
## **4-H Shooting Sports Program Priorities**

An examination of the 4-H Shooting Sports Priority Pyramid helps explain the overall philosophy, scope, and direction of the program and its potential for PYD (see Figure1).

**Figure 1.**

4-H Shooting Sports Priority Pyramid





PYD = positive youth development. Adapted from "Module 3—Creating and Implementing a High Quality Program," by S. T. Williver and D. J. White, 2018, *National 4-H Shooting Sports: Primers for 4-H Shooting Sports Instructors*, p. 28. Copyright 2018 by the National 4-H Shooting Sports Committee.

In this model, education forms the foundation and largest portion of the pyramid. According to Arnold (2018), "Youth programs, like 4-H, have the potential to provide a supportive context for thriving" (p. 144). The 4-H Shooting Sports program provides that supportive context in that, as suggested by Arnold (2018), it allows young people opportunities to explore their passions and interests, promotes positive relationships with adults, reflects the elements of a high-quality program, and engages youths in a well-rounded 4-H experience.

The next priority level in the model, recreation, rests on the sound foundation of education. According to Milteer and Ginsburg (2012), guided and unstructured recreational opportunities help youths grow socially and emotionally; bolster creativity and imagination; lead to healthy brain development; enhance physical health; aid in learning to share, negotiate, and resolve conflicts; and build resiliency.

The final level of the pyramid is competition. Although it comprises the smallest area of the model, competition is at the top of the pyramid because it is a highly visible and culminating event at county, state, and national levels. Radhakrishna, Everhart, and Sinasky (2006) found that competition was beneficial in helping youths "learn new things, develop life skills, set goals, and strive for excellence" (para. 20).

As is the case with other 4-H programs, PYD is the primary goal of 4-H Shooting Sports. PYD is promoted at all levels of the pyramid. Just as work with animals is a means to achieving PYD in the more traditional 4-H horse and livestock project areas, use of firearms serves the same purpose. The 4-H Shooting Sports program's focus on PYD underscores that the program is more concerned with creating champion youths—not necessarily champion marksmen and markswomen.

## Instructional Focus of 4-H Shooting Sports

To acknowledge potential concerns about the 4-H Shooting Sports program's introducing 4-H members to firearms, it is important to be aware of the four concepts that drive the program's instructional components: (a) encouraging life skills development and PYD, (b) training adults to be effective teachers of young people, (c) teaching the first shot, and (d) advancing safety.

- *Encouraging life skills development and PYD.* The focus on life skills development and PYD sets 4-H Shooting Sports apart from other youth shooting sports programs. Of course, these two principles are the foundation for all 4-H programs, not just 4-H Shooting Sports.
- *Training adults to be effective teachers of young people.* The National 4-H Shooting Sports Committee, which is chartered by the National 4-H Program Leader Working Group, establishes the minimum standards related to instructor certification requirements (Goodwin, 2018). All 4-H Shooting Sports instructors receive a minimum of 12 hr of training in PYD, risk management, and shooting instruction before they can teach 4-H members at the county level. At the national level, no other 4-H project area requires this level of volunteer/instructor training (J. Kahler, personal communication, August 27, 2018).
- *Teaching the first shot.* 4-H Shooting Sports specializes in teaching young people to shoot their first shot and to shoot that first shot safely. The program is an introduction to the responsible and safe use of archery equipment and firearms for youths and adults.
- *Advancing safety.* Safety is a high priority of the 4-H Shooting Sports program. The program incorporates memorization, recollection, and internalization by participants to instill fundamental safety standards and ensure that those standards become second nature to 4-H members. In addition, 4-H Shooting Sports does not condone or promote simulated combat sports, such as paintball, because such activities run counter to the safety principles that are reinforced in 4-H Shooting Sports.

## Safety Record of 4-H Shooting Sports

Although the literature regarding 4-H project safety is sparse, the topic is an issue or subject of study in project areas beyond shooting sports. For example, states require youths in 4-H horse and pony projects to wear helmets (McKee & Brady, 2004), and the 4-H all-terrain vehicle project involves rules regarding the use of personal protective equipment (National 4-H Council, 2011). In fact, American Income Life, the major accident insurance provider for 4-H clubs, assesses a higher premium for enrollment in horse, all-terrain vehicle, motorcycle, and team sports projects, whereas 4-H Shooting Sports enrollees are assessed at the regular rate. However, it remains important for Extension administrators to have the information necessary to address the question "Is it safe to put firearms in the hands of youths?"

When assessing the safety of the 4-H Shooting Sports program, it is helpful to compare the program to other youth sporting activities. Table 1 shows annual participation figures,

numbers of injuries requiring medical attention, and injury rates for youth sports in the United States.

**Table 1.**  
Annual Youth Sports Participation, Injuries, and Injury Rates in the United States

<b>Sport</b>	<b>Annual participation (#)</b>	<b>Injuries (#)</b>	<b>Injury rate (%)</b>
Football	5,286,000 <sup>a</sup>	354,300	6.7
Wrestling	805,000	38,900	4.8
Basketball	9,694,000	359,300	3.7
Lacrosse	804,000	17,700	2.2
Softball	2,622,000 <sup>b</sup>	53,300	2.0
Soccer	9,828,000 <sup>c</sup>	171,000	1.7
Baseball	6,711,000	106,100	1.6
Hockey	1,113,000 <sup>d</sup>	15,600	1.4
Volleyball	2,680,000 <sup>e</sup>	34,700	1.3
Gymnastics	2,809,000	33,000	1.2
Track and field	2,417,000	23,900	1.0
4-H Shooting Sports	338,621	0.12 <sup>f</sup>	<0.00004

*Note.* Annual participation numbers for 2014 obtained from "Youth Sports Participation Statistics and Trends," by P. Langhorst, 2016, *Engage Sports*. Retrieved from <http://engagesports.com/blog/post/1488/youth-sports-participation-statistics-and-trends>. Annual injury numbers for 2013 obtained from "Sports and Recreation Safety Fact Sheet," by Safe Kids Worldwide, 2015. Retrieved from [https://www.safekids.org/sites/default/files/documents/skw\\_sports\\_fact\\_sheet\\_feb\\_2015.pdf](https://www.safekids.org/sites/default/files/documents/skw_sports_fact_sheet_feb_2015.pdf). 4-H Shooting Sports annual participation numbers through 2014 and annual injury numbers through 2013 obtained from the National 4-H Shooting Sports Committee (C. Arnold, personal communication, August 2, 2018).

<sup>a</sup>Tackle and touch football combined. <sup>b</sup>Fast-pitch and slow-pitch softball combined. <sup>c</sup>Indoor and outdoor soccer combined. <sup>d</sup>Ice and field hockey combined. <sup>e</sup>Court and sand/beach volleyball combined. <sup>f</sup>Four injuries in a 34-year history of the program (1980–2014).

Some sample comparisons based on the data in Table 1 help emphasize the notable safety record of 4-H Shooting Sports. A youth engaged in soccer would be 42,500 times more likely to sustain an injury requiring medical attention than a youth in 4-H Shooting Sports would be. A similar comparison suggests that a youth football player would be 167,500 times more likely than a 4-H Shooting Sports member to sustain such an injury. As demonstrated by the data, 4-H Shooting Sports is one of the safest educational, recreational, and competitive activities in which youths can be involved.

## **Rationale for the Importance of 4-H Shooting Sports**

The rationale for introducing 4-H members to firearms, as supported by the program's priorities, focus, and commitment to safety, is multifaceted. For youths who are curious about or have an interest in archery and firearms, the 4-H Shooting Sports program (a) assures proper training in the safe and responsible use of archery equipment and firearms; (b) places youths in the care of trained, caring adults; (c) provides opportunities for quality family involvement; (d) provides positive peer groups for youths; (e) teaches youths to respect the deleterious potential of improper use of archery equipment and firearms; and (f) emphasizes respect for other people (Goodwin, 2018).

## Conclusion

The 4-H Shooting Sports program is one of the largest 4-H project areas in many states and nationally. The risk management safeguards employed in the 4-H Shooting Sports program exceed other 4-H project areas. Moreover, the injury rate for this youth activity is far below that of other youth sporting activities. For the last 38 years, the 4-H Shooting Sports program has held true to a philosophy of comprehensive education, lifelong recreation, and healthful competition. It, like other 4-H project areas (Arnold, 2018), offers youths an environment in which youth thriving leads to positive developmental outcomes and a successful transition into adulthood.

## References

- Arnold, M. E. (2018). From context to outcomes: A thriving model for 4-H youth development programs. *Journal of Human Sciences and Extension*, 6(1), 141–160. Retrieved from [https://docs.wixstatic.com/ugd/c8fe6e\\_755e5c14ab3f4d03ac84b3250597f613.pdf](https://docs.wixstatic.com/ugd/c8fe6e_755e5c14ab3f4d03ac84b3250597f613.pdf)
- Culp, K., Hance, R., Reynolds, L. R., & Bentley, G. S. (2016). Online orientation for 4-H volunteers. *Journal of Extension*, 54(6), Article 6TOT2. Available at: <https://www.joe.org/joe/2016december/tt2.php>
- Gillespie, D. R. (2006). Conducting 4-H spring break activities to meet community needs. *Journal of Extension*, 44(2), Article 2TOT6. Available at: <https://www.joe.org/joe/2006april/tt6.php>
- Goodwin, J. (2018). Covering your assets; risk management. In D. White (Ed.), *National 4-H Shooting Sports: Primers for 4-H Shooting Sports instructors* (pp. 48–63). Washington, DC: National Institute of Food and Agriculture.
- Hill, R., & Goodwin, J. (2015). Using IMPLAN to evaluate the economic contribution of 4-H to Colorado and individual counties. *Journal of Extension*, 53(1), Article 1FEA6. Available at: <https://www.joe.org/joe/2015february/a6.php>
- Hines, S., & Riley, L. (2005). Documenting impact is possible when working with camp program youth leaders. *Journal of Extension*, 43(3), Article 3TOT1. Available at: <https://www.joe.org/joe/2005june/tt1.php>

Leggette, H., Lawrence, S., Merten, K., & McGuill, P. (2013). Perceived impact of the 2011 Texas 4-H Roundup on participants' development of life skills. *Journal of Extension*, 51(3), Article 3RIB1. Available at: <https://www.joe.org/joe/2013june/rb1.php>

Lewis, K. M., Hornillo, S. J., Widaman, K., Worker, S. M., & Trzesniewski, K. (2015). National 4-H Common Measures: Initial evaluation from California 4-H. *Journal of Extension*, 53(2), Article 2RIB3. Available at: <https://www.joe.org/joe/2015april/rb3.php>

Martin, P. D, & Kaufman, E. K. (2017). Double play: The need for 4-H to partner in youth sports. *Journal of Extension*, 55(5), Article 5IAW1. Available at: <https://www.joe.org/joe/2017october/iw1.php>

McKee, K., & Brady, C. (2004). Why should 4-H horse and pony youth wear certified equestrian helmets? *Journal of Extension*, 42(6), Article 6TOT4. Available at: <https://www.joe.org/joe/2004december/tt4.php>

Milteer, R. M., & Ginsburg, K. R. (2012). The importance of play in promoting healthy child development and maintaining strong parent-child bond: Focus on children in poverty. *Pediatrics*, 129, 204-213. doi:10.1542/peds.2011-2953

National 4-H Council. (2011). 4-H ATV safety leader's guide. Retrieved from <https://projectcentral.ohio4h.org/wp-content/uploads/2013/11/554GPM-National-ATV-Safety-Leader-Guide-2011.pdf>

Radhakrishna, R. B., Everhart, L., & Sinasky, M. (2006). Attitudes of 4-H participants about 4-H competitive events. *Journal of Extension*, 44(6), Article 6RIB3. Available at: <https://www.joe.org/joe/2006december/rb3.php>

Sabo, K. E., & Hamilton, W. V. (1997). 4-H Shooting Sports hits the mark with youth-at-risk. *Journal of Extension*, 35(5), Article 5FEA3. Available at: <https://www.joe.org/joe/1997october/a3.php>

White, D. J., & Smith, J. D. (2014). Acquisition, custody, and storage of firearms used in 4-H Shooting Sports programs. *Journal of Extension*, 52(5), Article 5TOT10. Available at: <https://www.joe.org/joe/2014october/tt10.php>

White, D. J., & Williver, S. T. (2014). Possession, transportation, and use of firearms by older youth in 4-H Shooting Sports programs. *Journal of Extension*, 52(3), Article 3TOT9. Available at: <https://www.joe.org/joe/2014june/tt9.php>

**The Discussion Forum for this Commentary can be found at:**

<https://joe.org/joe/output/2019february/comm2.php#discussion>

Copyright © by *Extension Journal, Inc.* ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the Journal Editorial Office, [joe-ed@joe.org](mailto:joe-ed@joe.org).

If you have difficulties viewing or printing this page, please contact JOE Technical Support