# Hazard Ridge: 3D Immersive Video Game Tools of the Trade

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# Background:

**Teens at high risk for farm injury and Fatality**

Story-based Interventions

Digital Gaming & Engagement

Hazard Ridge Development

- Data show that youth aged 15-19 are at high risk for farm injury and fatality – in Kentucky those numbers are 3x the national average

- Of the 1.12 million children and adolescents under 20 years age who reside on farms, about 590,000 perform farm-related tasks. An additional 307,000 children and adolescents were hired to work on farms.

- An estimated 23,100 children and adolescents were injured on farms; 5,800 of these injuries were due to farm work.

- ATVs are popular as farm equipment for work and for recreational purposes in rural areas

- ATV and horseback riding deaths are added to tractor overturn, run over, and roadway collisions deaths occupational agriculture-related deaths sum to substantially more than 5% of the all industry annual total

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- The *Economics of Prevention Program* was a research and development project funded by NIOSH and conducted at the Southeast Center for Agricultural Health &Injury Prevention (http://www.mc.uky.edu/eop/index.html).

- A series of educational story-based simulation exercises were developed that focused on four injury categories: roadway collisions, tractor overturns, hearing loss and ATV injuries on farms (http://www.mc.uky.edu/eop/storysim.html).

- Each simulation story showed events and decisions leading up to an injury event. An excel-based Cost Tool showed the actual costs of an injury *after* the event – the consequences and costs – both personal and social of a farm injury. Often in the millions of dollars over a lifetime. (http://www.mc.uky.edu/eop/excel.html).

- The design of the tools was based on the *Haddon Matrix of Injury Prevention* – understanding the pre-injury events, the injury event and the post injury event.

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- The logical extension of the story simulations and Cost Tools in a second round of funding was to appropriate the latest form of interactive narrative – digital gaming for use by at-risk teens.

- Several studies exist showing knowledge gains through gaming in the area of safety knowledge (Coles et al. 2007; Lynch, 2008; Ruppel & Schatz, 2011).

- The current 'world of digital natives' (Prensky, 2001) crave interactive digital electronic devices such as tablets, smart phones and online tools and resources.

- Digital games are engaging, but they also support player agency and decision making – key skills in making smart, safe decisions for safe farm practices (Mallory, 2020).

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- To pilot development of an immersive 3-D game, professional game designers *Super Soul* in Lexington, KY partnered with SCAHIP researchers (http://supersoul.co/portfolio-item/hazard-ridge/).

- The decision was to focus on ONE of the previously developed story simulations: *Brad's Last Ride* that depicts two teens who use their ATVs to do some field fence repair and then start joy riding their ATV in the field, resulting in a serious collision that paralyzes Brad for life and leaves the family and community with the personal and social costs of that event.

- The Cost Tool information was used to have the purpose of the game to discover and explore the community costs of the injury in a 3-D immersive gaming environment.

# Hazard Ridge: A Town with Troubles

**The Pretext for Interaction**

**Exploring the 3-D Space: The Courthouse Records in Hazard Ridge.**

**Play the Game!**

- Hazard Ridge – a town where teens are dying and Elise an agricultural safety & health researcher who also has an insurance background is sent to investigate

- Elise arrives at Hazard Ridge in a torrential rainstorm and is directed to the Courthouse, where records of the injuries and fatalities are stored.

- The game player in this 'walking simulator' game takes the role of Elise and follows clues and directions in the 3-D space to understand causes of the town's problems – ATV injuries to teens.

- There are collection tools to record and gather information on a computer in the Courthouse basement the user can collect and save.

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## Play the Game!

- The Hazard Ridge web page has information about the game, a short video of 3-D game environment highlights and a link to play the game – with specific instructions for certain internet browser limitations based on user feedback.

- Click on this link to begin your GAME PLAY!

  https://www.uky.edu/scahip/hazard-ridge

# Hazard Ridge Game

## References

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