



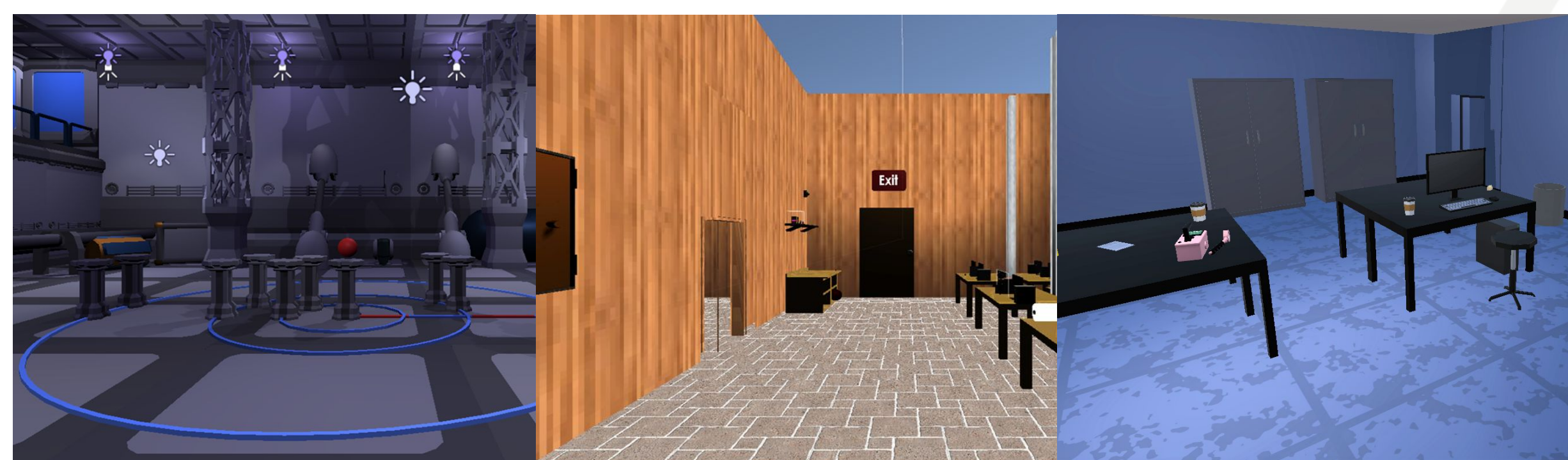
DoseBusters: A Virtual Reality Game for Radiation Detection and Protection Education and Outreach

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Introduction and Motivation

Traditional radiation physics education relies on experiments that can be; *inaccessible, expensive, and potentially dangerous*. DoseBusters is an fully-immersive game under development that uses virtual reality (VR) technology to account for these issues in an engaging experience.



Previous iteration of lab space design up to August 2022

Technical Approach

All assets are developed in-house by a predominantly undergraduate team:

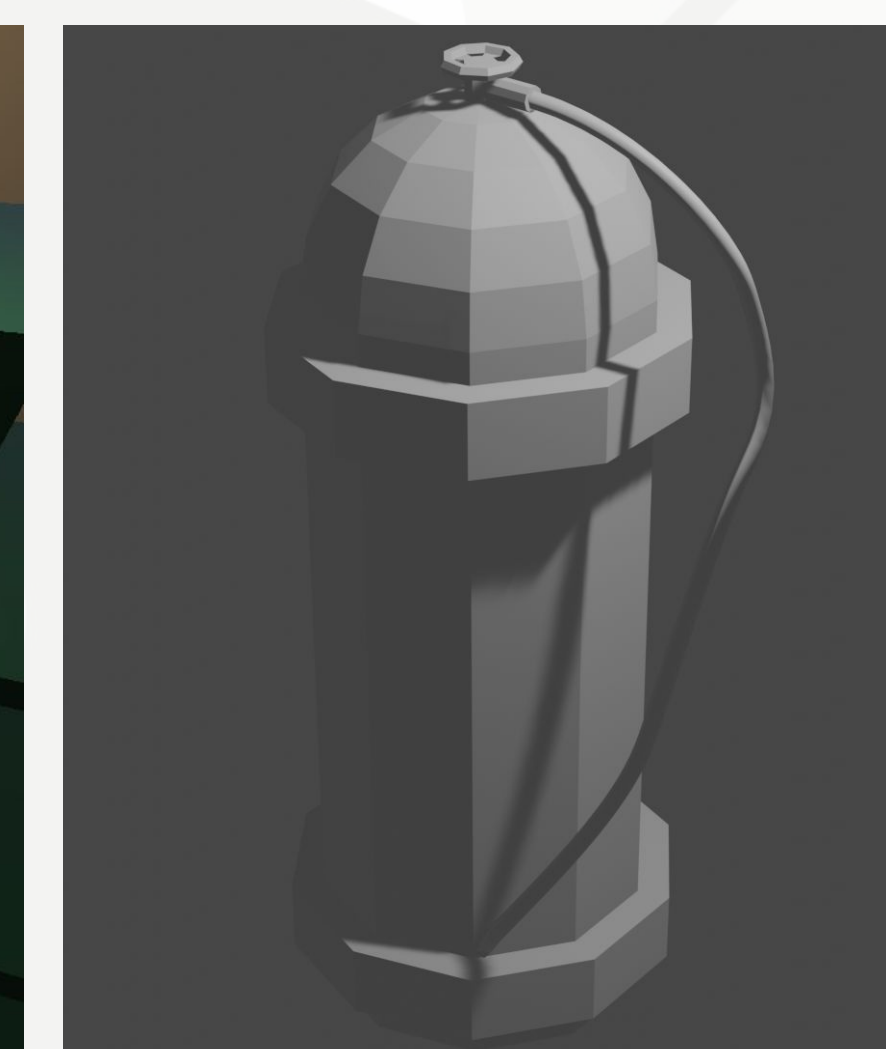
- Unity 3D game engine (scripted in C#)
- 3D models created with Blender
- 2D assets created with Photoshop



Mission Relevance

Teaching the public about radiation generates interest, and eases concerns about radiation.

Results



These are pictures of DoseBuster's updated environment and first playable demo, a tutorial on radioactive decay basics.

- (Top left) Ray gives a lecture on the radioactive decay demonstration
- (Top Right) Ray D. Yates, your virtual radiation assistant
- (Bottom Left) Source storage room attached to the lab
- (Bottom Right) 3D model of oxygen tank for Ray's prototype design

Expected Impact

- Serve as an educational tool for all ages
- Accurate radiation physics simulation
- Engaging outreach project

MTV Impact

- Provided funding for this project
- Expanded nuclear science knowledge
- Development of new skills

Conclusions

- Significant increase in the game's playability
- Stable and flexible environment
- Diverse team enhances game development

Next Steps

- Add a variety of radiation tutorials
- Update models to simulate complex physics
- Create a library of common radionuclides

