

# Looking for an exciting topic for your MS thesis?

## Do you like playing video games and want to make one yourself?

Come be part of an endeavor to transform the physics classroom into a more inclusive and equitable learning environment for all!

Prof. Kayali, Dr. Göbl, and Dr. Hull are looking for a MS student to start ASAP on a thesis that will involve the design, development, and evaluation of a game for students to experience the process of measuring background radiation. If this sounds appealing to you, send an e-mail to get more information TODAY to [michael.malvern.hull@univie.ac.at](mailto:michael.malvern.hull@univie.ac.at) !

**Problem:** Research has shown that having students explore their world with a radioactivity detector can be a transformative experience. Many are amazed when the detector is turned on in the classroom and it clicks, indicating that the room is radioactive. When students leave the school with the detector and find that there is virtually *no where* that is *not* radioactive, the misconception that radioactivity is intrinsically unnatural and dangerous is strongly shaken. But what about students who don't have access to a science classroom that can afford a radioactivity detector? How can they have a comparable experience? *That's where you and your game come in.*



In your MS thesis, you will benefit from the expertise of not just one, but three advisors! Your formal advisor will be Prof. Fares Kayali, who is head of the [Digital Education and Learning Group](#). However, the bulk of your contact will be with Dr. Mike Hull, a specialist in student reasoning about radioactivity, and Dr. Barbara Göbl, who has a background in serious game design and development. You're invited to use the [Computational Empowerment Lab's](#) resources during your work.

### Desired (but not required!) qualifications

- Experience with game design and/or computer programming
- Basic understanding of background radiation
- A schedule that permits the completion of the thesis in a reasonable amount of time

### Possible research questions

- How can we design a game on background radiation in a participatory way (where children contribute to the game design)?
- How can the learning goal of understanding that radioactivity is all around us be aligned with gaming goals?
- How do teachers view the options available to teach physics via games?
- How does the understanding of and attitudes about radioactivity grow when children play the game? How does that growth compare with what is obtained with a physical radioactivity detector?
- Your own!