



## Essay Competition

We really hope that you have been enjoying the University of Liverpool Nuclear Physics Online Masterclass. If you are aged 15-18 and studying physics at school or college, you are eligible to enter our essay competition. All the details of what you can write about, the prizes you can win, how to enter and the rules of the competition are given here but for any further information please just get in touch with us at [hello@livnuclear.co.uk](mailto:hello@livnuclear.co.uk). There are also video contributions from Dr Laura Harkness-Brennan and Dr Helen Vaughan to give you some guidance for choosing a topic and tips on how to write a good essay. The results of the competition will be announced 5<sup>th</sup> August 2020. Good luck!

### What can I write about?

We would like you to write about a topic that you have found particularly interesting during the masterclass. The world is your oyster! To help get you thinking we have provided a few example topics, but it is best if you write about something you found interesting:

- how nuclear physics experiments are carried out at accelerator facilities
- the principles of radiation protection and how they are used to keep people safe
- how gamma-ray imaging is used in medicine
- how we can study the different shapes and sizes of atomic nuclei
- why the inverse square law for gamma radiation is important in quantifying the amount of radiation using detectors

The essay should be no longer than 2 sides of A4 page and should be submitted either as a Microsoft Word Document or a PDF. The minimum font size is 11. Figures/pictures are allowed and even encouraged. **You should write the essay suitable for someone in your peer-group** (someone studying physics at school, maybe thinking of studying physics or engineering at university) and therefore you can assume that they know the basic structure of an atom but you will need to explain complex terms.

### What can I win?

The essays will be judged by a panel from the University of Liverpool Nuclear Physics Group. The first and second placed essays will be awarded the following prizes:

#### 1<sup>st</sup> Place Prize

- £100 Amazon Voucher
- Paperback copy of the book "An Introduction to the Physics of Nuclear Medicine (IOP Concise Physics Series)", signed by the author Dr Laura Harkness-Brennan
- Access to a mentor from the University of Liverpool Nuclear Physics Group during the 2020/2021 school year
- A certificate

#### 2<sup>nd</sup> Place Prize

- £50 Amazon Voucher
- Access to a mentor from the University of Liverpool Nuclear Physics Group during the 2020/2021 school year
- A certificate

### How to enter

Submit your essay to [hello@livnuclear.co.uk](mailto:hello@livnuclear.co.uk) by 5pm Wednesday 22<sup>nd</sup> July 2020. Sorry but we won't be able to judge any essays received after this deadline.

## Terms and Conditions

1. The content of the essay must be relevant to the topics covered in the University of Liverpool Online Nuclear Physics Masterclass. If you are not sure, please check with us before writing it ([hello@livnuclear.co.uk](mailto:hello@livnuclear.co.uk)).
2. It should be written in a way that is suitable for an audience of readers aged 15-18 studying physics at school.
3. The essay should be no longer than 2 sides of A4 page and should be submitted either as a Microsoft Word Document or a PDF. The minimum font size is 11. Essays submitted in different formats will not be accepted.
4. The panel will be composed of researchers in the Nuclear Physics Group at the University of Liverpool and their judgement of the essays is final.
5. Prizes will be issued to the winners by 28<sup>th</sup> August 2020, the recipients will be contacted by email to arrange this.
6. Access to a mentor from the University of Liverpool Nuclear Physics Group for the school year 2020/2021 will allow the recipient to contact the mentor by email to discuss aspects of physics that they find interesting or want to discuss further and to seek guidance for their career (expectation is that this will be no more than twenty times). It will also be possible to request a video call but only if the student is on school grounds with a teacher present.
7. The award-winning essays will be made available on the <https://livnuclear.co.uk>, so please don't enter the competition if you don't agree that they can be made available online.