

University of Liverpool Online Nuclear Physics Masterclass

24th June to 22nd July 2020

[Register HERE](#)

Session 1 Wednesday 24 th June	Radiation Shielding Talks by <ul style="list-style-type: none"> • Miss Jaimie Platt, PhD student at the University of Liverpool • Mrs Jess Heaps, Health Physicist at Rolls Royce Activities <ul style="list-style-type: none"> • Undertake a virtual experiment to study the attenuation of gamma radiation in materials • Design shielding for a nuclear industry problem
Session 2 Wednesday 24 th June	Nuclear Shapes and Sizes Talks by <ul style="list-style-type: none"> • Prof Bradley Cheal, Professor at the University of Liverpool • Dr Liam Gaffney, Research Fellow at the University Online activities <ul style="list-style-type: none"> • Use our interactive map to discover where nuclear physics researchers do their experiments and perform independent research about the facilities
Session 3 Wednesday 1 st July	Nuclear Instability Talk by <ul style="list-style-type: none"> • Prof Rodi Herzberg, Professor at the University of Liverpool Activities <ul style="list-style-type: none"> • Build your own decay chains • Investigate the decay equation
Session 4 Wednesday 1 st July	Nuclear Medicine Talks by <ul style="list-style-type: none"> • Dr Amina Patel, Medical Physicist at Royal Brompton & Harefield Hospitals • Dr Laura Harkness-Brennan, Reader at the University Activities <ul style="list-style-type: none"> • Discover how much radiation dose is received in different medical procedures • Test your knowledge in our online quiz
Session 5 Wednesday 8 th July	Gamma Radiation and the Inverse Square Law Talks by <ul style="list-style-type: none"> • Dr Ren Cooper, Deputy Head of the Applied Nuclear Physics Program at Lawrence Berkeley National Laboratory • Miss Olivia Voyce, PhD student at the University of Liverpool Activities <ul style="list-style-type: none"> • Undertake a virtual experiment to study the inverse square law • Use your knowledge of the inverse square law to design the geometry of a gamma detection measurement
Session 5 Wednesday 8 th July	Essay Competition Submit your essay by Wednesday 22 nd July. to win prizes <ul style="list-style-type: none"> • 1st place: £100 Amazon voucher, signed copy of "Introduction to the Physics of Nuclear Medicine by L Harkness-Brennan" and access to a mentor from the University of Liverpool Nuclear Physics Group for the 2020/2021 school year • 2nd place: £50 Amazon voucher and access to a mentor from the University of Liverpool Nuclear Physics Group for the 2020/2021 school year Talks with guidance on the essay topics and tips for writing by: <ul style="list-style-type: none"> • Dr Laura Harkness-Brennan, Reader at the University of Liverpool • Dr Helen Vaughan, Senior Lecturer at the University of Liverpool

How do I access the masterclass material?

To access the material, **please register [here](#)**. You will then be sent the website details to connect. The material will be available until 22nd July 2020.

Who is this masterclass for?

The masterclass is for year 11, 12 and 13 students studying physics. The content focuses on demonstrating how nuclear physics relevant to the A-level curriculum is applied in nuclear physics research and nuclear industry careers. Different careers will also be highlighted.

What equipment do I need?

The only equipment you will need is access to a desktop computer or laptop that has internet access. All activities will be run through a website that is compatible with common browsers including Chrome and Firefox. Please note it is not possible to access the material through a tablet or mobile phone at this time.

Do I have to go to into my school to participate?

No, you don't have to go to your school to participate and you can access the material any time until 22nd July 2020.

Can I ask questions to the speakers?

Yes! You can watch the videos at any time and then if you have any questions you can submit them online.