

Surname	Given	Project Title	Supervisor	Independent	Chair	Date	Time
Cassells	Ross	Photon pair generation in integrated ring resonator devices	Michael Strain	Konstantinos Lagoudakis	Elmar Haller	30/04/2021	10:00
Georgiou	Kostas	Laser pulse based ionization of matter	Bernhard Hidding	Craig Robertson	Dino Jaroszynski	30/04/2021	10:00
Johnston	Zak	Thermal Quantum Lidar	John Jeffers	Daniel Oi	Andrew Daley	30/04/2021	10:00
Shek	Hon San Callum	Quantum correlations in nano-lasers	Peter Kirton	Gordon Robb	Nigel Badnell	30/04/2021	10:00
Barnard	Fraser	Photon statistics of small lasers	Thorsten Ackemann	Kali Wilson	Erling Riis	30/04/2021	10:00
Kilianski	Romuald	Ghost Displacement	John Jeffers	Alison Yao	Andrew Daley	30/04/2021	11:00
Carey	Sarah	Control of spatially rotating structures in diffractive Kerr cavities	Alison Yao	Peter Kirton	Gian-Luca Oppo	05/05/2021	10:00
Dallas	Gemma	Photoconduction in wide bandgap semiconductors	Fabien Massabuau	Jennifer Hastie	Carol Trager-Cowan	05/05/2021	10:00
Dempsey	Fionn	High Precision Timing for Satellite Quantum Communication	Daniel Oi	Sebastian Van de Linde	Aidan Arnold	05/05/2021	10:00
Duncan	Nicholas	Numerical simulation of cyclotron maser amplifiers	Alan Young	Phil MacInnes	Adrian Cross	05/05/2021	10:00
Kacinskaite	Evelina	Reducing the information gap in standing wave microscopy	Gail McConnell	Jonathan Pritchard	David McKee	05/05/2021	10:00
McAuley	Connor	Electron beam transport modelling and machine learning in particle accelerators	Bernhard Hidding	Liang Zhang	Dino Jaroszynski	05/05/2021	10:00
McDougall	Cameron	Coarse-grained DNA simulation of DNA supercoiling	Oliver Henrich	Yu Chen	Konstantinos Lagoudakis	05/05/2021	10:00
Stewart	Jamie	Ion Channel Laser with Large Oscillation Amplitude	Bernhard Ersfeld	TBA	Bengt Eliasson	05/05/2021	10:00
Doveiko	Daniel	Numerical modelling of FRET in Human Serum Albumin	Olaf Rolinski	Ben Hourahine	Oliver Henrich	05/05/2021	11:00
Graham	Cameron	Scattering of relativistic electrons off electromagnetic ion cyclotron waves	Bengt Eliasson	Craig Donaldson	Bernhard Hidding	05/05/2021	11:00
Inglis	Matthew	Spectral properties of reflected laser light from expanding plasma targets	Martin King	Ross Gray	Dino Jaroszynski	05/05/2021	11:00
Murray	Curtis	Focusing electron beams from a laser-plasma wakefield accelerator	Mark Wiggins	Enrico Brunetti	Adrian Cross	05/05/2021	11:00
O'Neill	Kyle	Plasmon enhanced fluorescence	Yu Chen	Fabien Massabuau	Francesco Papoff	05/05/2021	11:00
O'Shea	Joshua	Correlating compositional variation to the optical emission properties of tin-gallium oxide semiconductors	Robert Martin	Antonio Hurtado	Carol Trager-Cowan	05/05/2021	11:00
Sahi	Gurpreet	Adaptive noise reduction for sCMOS cameras	Brian Patton	Sebastian Van de Linde	Gail McConnell	05/05/2021	11:00
Yeoman	Neal	Atomic Processes for Astrophysical Plasmas II	Nigel Badnell	Alan Young	Kevin Ronald	05/05/2021	11:00
Donnelly	Joshua	Electron microscope analysis of semiconductor alloys	Paul Edwards	Fabien Massabuau	Konstantinos Lagoudakis	05/05/2021	12:00
Qazi	Aimon	Measurement of the second-order nonlinear coefficient in waveguides	Lucia Caspani	Antonio Hurtado	Gian-Luca Oppo	05/05/2021	12:00
Edgar	Daniel	Self-referencing spectral interferometry as a diagnostic of relativistic induced transparency	Robbie Wilson	Colin Whyte	Kevin Ronald	05/05/2021	12:00
Morrison	Kirsty	Chemical evolution of galaxies	Junjie Mao	Mark Wiggins	Zheng-Ming Sheng	05/05/2021	12:00
Aguiar Maduro	Richard	Grating magneto-optical trap modelling	Aidan Arnold	Terry Dyer	Erling Riis	05/05/2021	13:00
Aroca Salom	Jose Enrique	Simulation of non-Markovian dynamics of an impurity in a reservoir gas	Andrew Daley	Kali Wilson	John Jeffers	05/05/2021	13:00
Calderwood	Connor	Simulating structural defects in α -Ga2O3	Ben Hourahine	Johannes Herrnsdorf	Robert Martin	05/05/2021	13:00
Doran	Jordan	Lloyd's mirror in standing wave microscopy	Gail McConnell	Sebastian Van de Linde	David McKee	05/05/2021	13:00
MacCuish	Iain	Opto-mechanics of Bose-Einstein Condensates in Optical Cavities	Gian-Luca Oppo	Elmar Haller	Alison Yao	05/05/2021	13:00
Parker	Thomas	Analysis of Muon Ionisation Cooling Experiment	Alan Young	TBA	Adrian Cross	05/05/2021	13:00
Torrance	Ben	Particle-in-cell modelling of laser-plasma acceleration with kHz lasers	Bernhard Hidding	Phil MacInnes	Kevin Ronald	05/05/2021	13:00
Mills	Brandon	3D imaging using time of flight and photometric stereo techniques	Michael Strain	Johannes Herrnsdorf	Elmar Haller	05/05/2021	14:00
Brown	Mollie	Atomic Processes for Astrophysical Plasmas I	Nigel Badnell	Alan Young	Kevin Ronald	05/05/2021	14:00
Marshall	Thomas	RF-gated Thermionic Injector Gun for Free-Electron Laser	Liang Zhang	Grace Manahan	Zheng-Ming Sheng	05/05/2021	14:00

Polland	Kay	Quantum Dots Nanolasers	Francesco Papoff	Paul Edwards	Brian McNeil	05/05/2021	14:00
Gorrie	Alister John	Spiking neurons with resonant tunneling diodes for high speed and energy efficient neuromorphic nanophotonic computing	Antonio Hurtado	Brian Patton	Elmar Haller	05/05/2021	15:00
Cruickshank	Robbie	Synchronisation in open quantum systems	Peter Kirton	Gordon Robb	Nigel Badnell	05/05/2021	15:00
Olsen	Chloe	Electromagnetic radiation from laser wakefields excited in plasma	Zheng-Ming Sheng	Colin Whyte	Adrian Cross	05/05/2021	15:00
Shepherd	Calum	Investigation of polytypism in nitride semiconductors	Carol Trager-Cowan	Paul Edwards	Robert Martin	05/05/2021	15:00
Bell	Kaitlyn	A coherent synchrotron source based on a laser-plasma wakefield accelerator	Dino Jaroszynski	Enrico Brunetti	Zheng-Ming Sheng	TBD	TBD
Couttie	Benedict	Simulation and optimisation of a high-k scattering diagnostic for fusion plasma turbulence studies	David Speirs	Craig Robertson	Bengt Eliasson	06/05/2021	10:00
MacDonald	Fiona	Innovation and translation of a miniature atomic clock platform	Susan Spesvytseva	Lucia Caspani	Jonathan Pritchard	06/05/2021	10:00
Melville	Stuart	Analysis of Automatic Captioning Software	Francesco Papoff	TBA	Brian McNeil	06/05/2021	10:00
Paterson	Ross	Why do ocean colour chlorophyll products fail in coastal waters?	David McKee	Brian Patton	Yu Chen	06/05/2021	10:00
Woodbyrne	Shamar	Numerical modelling of FRET in nanostructures	Olaf Rolinski	Ben Hourahine	Oliver Henrich	06/05/2021	10:00
Higgins	Mark	Stochastic particle heating of charged particles by plasma waves	Bengt Eliasson	Enrico Brunetti	Bernhard Hidding	06/05/2021	11:00
Lockie	Jack	Photoionization modeling of AGN winds	Junjie Mao	Mark Wiggins	Zheng-Ming Sheng	06/05/2021	11:00
Terry	Derek	Quantum Dots Nanolasers	Francesco Papoff	Paul Edwards	Brian McNeil	06/05/2021	11:00
Jennings	Elizabeth	Electron acceleration assisted by radiation friction in ultra-intense laser fields	Zheng-Ming Sheng	Colin Whyte	Adrian Cross	06/05/2021	12:00
Bartholomew	Stuart	Domain Walls in Optical Fibre Resonators	Gian-Luca Oppo	Daniel Oi	Alison Yao	11/05/2021	10:00
Bartlett	Brandon	Lenses for cooling atoms	Aidan Arnold	Terry Dyer	Erling Riis	11/05/2021	10:00
Cashel	Thomas	Numerical modelling of FRET in beta-amyloid	Olaf Rolinski	Ben Hourahine	Oliver Henrich	11/05/2021	10:00
Crompton	Malcolm	Focusing electron beams from a laser-plasma wakefield accelerator	Mark Wiggins	Liang Zhang	Adrian Cross	11/05/2021	10:00
Deegan	Emma	Interactive Physics simulations	Gordon Robb	Martin O'Mullane	Jonathan Pritchard	11/05/2021	10:00
Humphreys	Oliver	Building the spectra of quasicrystals in magnetic fields	Andrew Daley	Peter Kirton	John Jeffers	11/05/2021	10:00
Ireland	Paul	Computational Modelling of X-ray Free Electron Lasers	Brian McNeil	Craig Robertson	Nigel Badnell	11/05/2021	10:00
Lenart	Arpad	Space radiation reproduction with laser-plasma-accelerators and Monte Carlo codes	Bernhard Hidding	Adam Noble	Kevin Ronald	11/05/2021	10:00
McNeill	Rory	Ortho-mode transducers for polarisation control	Colin Whyte	David Speirs	Bengt Eliasson	11/05/2021	10:00
Moretti	Rachel	Engineering semiconductor defects for quantum electronics	Alessandro Rossi	Jennifer Hastie	Konstantinos Lagoudakis	11/05/2021	10:00
Kerr	Deryn	Atomic Physics Simulation for Outreach and Learning	Stuart Ingleby	Kali Wilson	Stefan Kuhr	11/05/2021	11:00
Arthur	Duncan	Atomic physics of high Z elements in fusion	Martin O'Mullane	Bernhard Ersfeld	Dino Jaroszynski	11/05/2021	11:00
Cope	Ellie	Investigation of a Microwave undulator for Free-Electron Laser	Craig Donaldson	David Speirs	Bengt Eliasson	11/05/2021	11:00
Dixon	James	How many photons make an image?	John Jeffers	Daniel Oi	Andrew Daley	11/05/2021	11:00
Fayol	Basile	Optimisation of bremsstrahlung radiation from laser-dense plasma interactions	Ross Gray	Phil MacInnes	Kevin Ronald	11/05/2021	11:00
Iqbal	Zoha	Nonlinear Propagation of Fully Structured Light	Alison Yao	Francesco Papoff	Gian-Luca Oppo	11/05/2021	11:00
Morton	Ross	Correlated quantum transport	Ben Hourahine	Alessandro Rossi	Robert Martin	11/05/2021	11:00
Vugrinec	Dominik	Coarse-grained DNA simulation of DNA supercoiling	Oliver Henrich	Yu Chen	Konstantinos Lagoudakis	11/05/2021	11:00
Ivens	George	Photon pair generation in integrated ring resonator devices	Michael Strain	Konstantinos Lagoudakis	Elmar Haller	11/05/2021	12:00
McConnachie	Gary	Web-based electron diffraction tool	Paul Edwards	Olaf Rolinski	Robert Martin	11/05/2021	12:00
McMillan	Adam	The theory of X-ray Free electron Lasers	Brian McNeil	Craig Donaldson	Nigel Badnell	11/05/2021	12:00

Ulm	Clemens	Optimising deconvolution of single-atom fluorescence images	Stefan Kuhr	Terry Dyer	Erling Riis	11/05/2021	12:00
Williams	Martin	Investigating the origin of red emission in gallium oxide semiconductors	Naresh Gunasekar	Alessandro Rossi	Carol Trager-Cowan	11/05/2021	12:00
Kistenberger	Susan	BEC simulations	Gordon Robb	Kali Wilson	Jonathan Pritchard	11/05/2021	14:00
Koehn	Lennart	Numerical simulation of optical transport	Stefan Kuhr	Terry Dyer	Erling Riis	11/05/2021	14:00
McLelland	Megan	Luminescence properties of Ga2O3 semiconductors	Fabien Massabuau	Michael Strain	Carol Trager-Cowan	11/05/2021	14:00
Ghani	Zubair	Modelling of Optical Lattices	Elmar Haller	Stefan Kuhr	Erling Riis	11/05/2021	15:00
Martinez-Cosentino Blasco	Fernando	Photonic neurons with lasers for ultrafast brain-inspired computing	Antonio Hurtado	Lucia Caspani	Gail McConnell	12/05/2021	10:00
Muñoz Peligro	Paula	Casimir-Polder Forces and Optical Fibres	Andrew Daley	Gordon Robb	John Jeffers	12/05/2021	11:00
Williams	Barnaby	Digital modulation of light-emitting diodes	Johannes Herrnsdorf	Jennifer Hastie	Nigel Langford	12/05/2021	11:00
Ramsay	Keir	Use of ABCD matrices to design laser resonators	Alan Kemp	Jennifer Hastie	Nigel Langford	12/05/2021	12:00
Kostial	Andrej	Optical properties of metal-dielectric nanocomposites	Yu Chen	Francesco Papoff	Olaf Rolinski	12/05/2021	12:00
Kirkpatrick	Ross	Optical Cavities	Nigel Langford	Paul Griffin	Alan Kemp	12/05/2021	14:00
Gill	Megan	Optical Cavities	Nigel Langford	Paul Griffin	Alan Kemp	12/05/2021	15:00
Mir	Tariq	Topological Insulators	Ben Hourahine	Fabien Massabuau	Robert Martin	13/05/2021	10:00
Callan	David	Investigating the effect of gas pressure on the electron diffraction patterns	Naresh Gunasekar	Alessandro Rossi	Carol Trager-Cowan	13/05/2021	10:00
Quaack	Charlie	Using quantum sensors to measure human heart activity	Paul Griffin	Thorsten Ackemann	Stefan Kuhr	17/05/2021	10:00
Cumming	Jack	Simulation of Maxwells equations for optical design of quantum technologies	Paul Griffin	Thorsten Ackemann	Stefan Kuhr	17/05/2021	11:00
Agnew	Nicola	New schemes for microwave Rydberg sensing	Jonathan Pritchard	Alessandro Rossi	Thorsten Ackemann	17/05/2021	12:00
Wang	Haofu	Laser specification and design for undersea LIDAR	Alan Kemp	Michael Strain	Thorsten Ackemann	17/05/2021	14:00
Harrison	Jack	Tamper-indicating quantum seal	Lucia Caspani	Susan Spesvytseva	Gian-Luca Oppo	TBD	TBD
Austin	Connor	Photonic neurons with lasers for ultrafast brain-inspired computing	Antonio Hurtado	Lucia Caspani	Gail McConnell	TBC	TBC
Carroll - Canning	Ava	Why do ocean colour chlorophyll products fail in coastal waters?	David McKee	Brian Patton	Yu Chen	TBC	TBC
Lynagh	Conor	Characterisation of Digital Cameras	Daniel Oi	Ross Gray	Aidan Arnold	TBC	TBC
Philip Mathew	Calvin	Use of ABCD matrices to design laser resonators	Alan Kemp	Jennifer Hastie	Nigel Langford	TBC	TBC
MacKintosh	Kirsty	Spot Finding Systematic Error	Sebastian van de Linde	Aidan Arnold	Brian Patton	TBC	TBC

Notes: Vivas are 45 mins long via Zoom. Students are expected to give a short 5 min introduction to their project without the use of slides (it is not meant to be a talk/presentation) followed by 30 mins of questions. The final 10 mins are left for discussion by the Examination Committee alone. During the viva, students will be expected to be able to explain the background, motivation, relevant literature, methods, results, analysis, and conclusions of their project work. The examination committee consists of staff from diverse areas of physics, hence the level of explanation should be able to cater to non-specialists.