



Algebra Geometry & Quantum Fields

Programme Handbook

Centre for Doctoral Training
in Algebra, Geometry and Quantum Fields

2025-26

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Welcome

Welcome to the EPSRC Centre for Doctoral Training in Algebra, Geometry & Quantum Fields, a collaboration between Heriot-Watt University, the University of Edinburgh and the University of Glasgow.

This handbook outlines the most important information about AGQ, including the programme structure, regulations, administrative arrangements, programme content and timetables.

Algebra and Geometry encode structure and symmetry throughout mathematics, the physical sciences, advanced computing, and beyond. Quantum Field Theory is the most well-developed and promising model for describing the elementary interactions in our physical universe. This CDT was formed to bring together doctoral research students and their supervisors working in these three fields, to provide training and research emphasising the interfaces and exchanges between fields, and their common applicability to wider societal challenges.

You will begin your research together with your supervisor on day one of your studies. During the first year two years, you will also take Core Coursework across the three disciplines of the CDT, as well as Interface Coursework bridging different mathematical communities. You will take coursework on Advanced Research Computing – computer assisted proofs, machine learning as applied to theoretical mathematics and physics, and/or advanced computer algebra. You will also learn how to communicate your work and your skills to the wider world, culminating in a 3-month placement at the end of your third year, with one of our Academic, Industry or Third Sector partners. You will learn how to conduct research ethically and responsibly, both within academia and beyond. You will do all of these things in a community which is inclusive and vibrant, and shaped by students' needs, creativity and ambitions.

We are so pleased to welcome you to the CDT in Algebra, Geometry and Quantum Fields. We look forward to teaching you and to learning from you, and we can't wait to see what you accomplish in these next four years.

Professor Tara Brendle

Professor David Jordan

Co-Directors, Centre for Doctoral Training in Algebra, Geometry & Quantum Fields

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How to use this document

All AGQ CDT students are enrolled on a PhD with Integrated Studies, a degree programme developed, ratified, and administered by our three Universities jointly. All AGQ CDT students can expect equal access to training, resources, and support, regardless of their funding source or their primary institution.

Each student is nevertheless assigned a primary institution, being that of their primary supervisor, and certain aspects will vary in implementation between the three institutions, for example details of research and finance administration (e.g. processing of reimbursement forms), as well as particular provision of pastoral care and student support. For this reason, this document is arranged by headline topic, with links at the end of each heading for any institution-specific details.

This Student Handbook is a **living document** meaning that it will be updated as the CDT and our experience grow. The most up to date version can always be found at <https://www.agq-cdt.org/intranet> (password: AGQCDT). If some vital information is missing, please ask queries@agq-cdt.org, and we will answer your query and if appropriate include the information in a future version of the Handbook. Outdated versions will be archived, and changes will be documented against each new version.

Enrolment processes

Enrolling at all three universities

As you already know, the AGQ CDT is a joint programme between Heriot-Watt University, the University of Edinburgh, and the University of Glasgow. To ensure that all students are awarded a joint degree (i.e. a degree bearing the names of all three universities), you will need to be formally enrolled at all three institutions.

Enrolment at each university is important because it provides you with access to buildings and facilities at each partner institution, ensures your academic record can be updated with credits and progression each year, and allows you to progress to the final award of your joint degree.

If you applied through the University of Glasgow (as outlined on the AGQ website), you are already enrolled at Glasgow, regardless of whether your lead institution is the University of Edinburgh or Heriot-Watt University.

However, for the University of Edinburgh and Heriot-Watt University to also add your record to their systems (Euclid and Banner), you will need to complete an additional step, which involves

filing an application to the respective University(ies). We will share application links for each university, where you would create an account and submit an online application.

We will follow up with you after induction with full details and step-by-step guidance on how to complete enrolment at all remaining universities.

Data sharing

As part of the AGQ CDT joint programme, some of your information will be shared between our three partner universities (Heriot-Watt University, University of Edinburgh and University of Glasgow).

When you applied to the programme, you gave your consent for this data sharing, which is an important part of making sure you can be fully enrolled at each university, progress smoothly through your studies, and ultimately receive your joint degree.

If at any stage you would like to withdraw your consent, please don't hesitate to get in touch with us at: queries@agq-cdt.org.

Academic Training

Degree programme

Algebra, Geometry and Mathematical Physics PhD with Integrated Study, 4 years full-time study.

Note: Students must obtain supervisor's approval in the selection of courses.

Year 1: During the first year of the programme, students must complete 90 credits of coursework and 90 credits of dissertation research.

1. You must take these two Scientific Communication courses:

Required courses for all AGQ students					
Course Title	Course Code	Credits	Level	Course Type	Course instructor location
Examples Showcase		10	12	Scientific Communication	Alternating campuses
Group Project		20	12	Scientific Communication	Alternating campuses

2. You must take at least 30 credits of Core and Interface Courses. See the AGQ website, <https://www.agq-cdt.org/training> for the most up to date list of Core and Interface courses available each semester.

3. For your remaining credits you may take:
 - Other Core and Interface coursework on offer.
 - Up to 30 credits of Approved Cohort Reading Group (Level 12; 15 credits). See <https://www.agq-cdt.org/training> for the most up to date list of currently running Cohort Reading Groups.
 - Exceptionally by Directors' and Supervisor's approval, students may take up to 20 credits of:
 - o Supervised reading (Level 11; 15 credits)
 - o Approved aligned course work, including those offered by SMSTC, Higgs Centre, or any of our three institutions (Level 11; 10, 15 or 20 credits)

Years 2 & 3: During Years 2 & 3 students must complete a further 90 credits of coursework and 270 credits of dissertation research.

1. You must take these two courses:

Required courses for all AGQ students				
Course Title	Course Code	Credits	Level	Course Type
Research Computing 1/2/3		15	12	Computing
Collaborative Computing Project 1/2/3		15	12	Computing

2. You must complete the Internship & Reflection (Level 12, 30 credits)
3. You must complete a further 30 credits, to reach a total of 180 across years 1 to 3. Courses can be selected from the following categories: Core, Interface, and approved Cohort Reading Groups. (A maximum of 45 credits can be from approved reading groups over the entire programme). See the AGQ website, <https://www.agq-cdt.org/training> for the most up to date list of Core and Interface courses, as well as Cohort Reading Groups available each semester.

Year 4: During year 4 students are expected to focus entirely on their research, 180 credits dissertation research.

A typical student journey is as follows:

- Year 1
 - o 90 credits dissertation research
 - o 10 credits Examples Showcase
 - o 20 credits Group Project
 - o 30 credits Core coursework

- o 15 credits Interface coursework
- o 15 credits Cohort Reading Group or Interface Coursework
- Year 2
 - o 120 credits dissertation research
 - o 30 credits Research and Collaborative Computing
 - o 15 credits Interface coursework
 - o 15 credits Cohort Reading Group
- Year 3
 - o 150 credits dissertation research
 - o 30 credits Internship and reflection
- Year 4
 - o 180 credits dissertation research

Note: The above is just what a typical students' journey will look like, and the structure outlined above admits many variations. Please consult queries@agq-cdt.org and your supervisor with any questions about whether your plans fit within the degree programme.

Note: Students must obtain supervisor's approval in the selection of courses and reading groups. If students want to take more courses for credits than required (in their first year), they will in addition need to seek approval from the CDT team by sending an email to queries@agq-cdt.org.

Aside from these credited activities there will be additional cohort-building and enrichment activities. For illustration, a typical student journey is indicated below.



Academic Activities

A brief explanation of the credited activities is as follows. More details about each offering can be found on the AGQ website <https://www.agq-cdt.org/training>.

Core courses (15 credits): Our core courses equip students with the relevant technical background for their PhD project, as well as creating common culture. Students will normally choose from our six foundational Core Courses (20 credits each) running each year, including Algebraic Topology, Algebraic Geometry, Representation Theory, Differential Geometry and two Mathematical Physics courses.

Interface courses (15 credits): These courses are more advanced, introducing topics on the interfaces of Algebra, Geometry, and Quantum Field Theory.

CDT aligned courses (15 credits): These courses are not organised by the CDT itself; one such course may be taken for credit, subject to approval from supervisor and the CDT team.

Cohort Reading Groups (15 credits): Students can submit proposals before the start of each semester to organise cohort reading group on a topic of mutual interest.

Examples Showcase (10 credits): In the Example Showcase all first-year students present a key example in their research area to the wider cohort. The Examples Showcase provides the first-year cohort with an important overview of our three research themes, as well as offering practice in communicating with an audience of peers that is broader in outlook than a typical research seminar.

Group Projects (20 credits): In the Group Projects first-year students collaborate for one month in multi-institutional groups of 3-5 to write an expository paper on a topic of common research interest. Group Projects provide an opportunity for students to work with peers to produce a unified output synthesizing multiple perspectives on a more advanced topic agreed by the supervisors.

Research Computing (10 credits): Second-year students take at least one from a rota of advanced coding courses in (1) AI-assisted theorem-proving using Lean, (2) Symbolic Computation, (3) Machine Deep Learning and Applications in AGQ.

Computing Project (20 credits): Students will mature their coding and apply their Research Coding knowledge to curated research problems proposed by supervisors or industry partners, coding to a professional standard, including project management, version control, documentation, launch-testing, community development, through being part of a coding team.

Internship and Reflection (30 credits): Students engage in a 3-month placement with one of our Outreach, Industry or Third-Sector Partners.

Timetable and Course Details

A timetable of all current courses and course descriptions are available on the AGQ website: [Training – AGQ CDT \(agq-cdt.org\)](https://www.agq-cdt.org) and at the SMSTC webpage <https://www.smstc.ac.uk>.

Additional training (both optional and required) and site visits will be announced on the AGQ intranet <https://www.agq-cdt.org/intranet> (password AGQCDT).

For other important dates please see each universities' website:

Heriot- Watt University: [Academic calendar - Heriot-Watt University \(hw.ac.uk\)](https://www.hw.ac.uk)

University of Edinburgh: [Current academic year | The University of Edinburgh](https://www.ed.ac.uk)

University of Glasgow: [University of Glasgow - MyGlasgow - Academic Policy & Governance - Session dates](https://www.glasgow.ac.uk)

SMSTC

All AGQ-CDT courses are run through SMSTC. We thus ask you to participate in the SMSTC symposium and register for your courses on the SMSTC website (<https://smstc.ac.uk/>).

Cohort Reading Groups

Before the start of every semester, the AGQ team will collect expressions of interest for Cohort Reading Groups. If you would like to organise a reading group, please survey how many other students are interested and write to queries@agq.org with a short description of the proposed reading group.

If you hear that your proposed Cohort Reading Group is approved, we will ask you to draft a more precise description, including a rough syllabus for ten weeks of two-hour meetings. This description will then be advertised to all AGQ and GlaMS students.

Our admin team will help you with room bookings and hybrid equipment. We ask you to create a webpage (on <https://www.agq-cdt.org/cohort-reading-groups/>) for your reading group with all the relevant information: organisers, blurb + picture, dates+times+location, speaker+topic for each session and a precise link to the material covered.

The Reading Group will be credited if:

- The organisers keep the webpage up-to-date and keep track of attendance.
- Every (active) member of the group presents at least one topic.
- The informal (possibly hand-written) lecture notes are collected.

Group Projects

Students work in project groups (including members from at least 2 different institutions) to write an expository account of their learning on a topic that is chosen by their supervisors. The supervisors collaborate to choose a sufficiently broad “umbrella” topic for the group, as well as a more specialised topic for individual students. The students work together to write a joint introduction on this broader topic, and then each student contributes an individual chapter/section on their particular specialised topic. The basic idea is that the individual chapter is an opportunity for a student to delve into a topic their supervisor wishes them to learn, while the student’s contribution to the introduction helps them learn how their particular area fits into a somewhat broader mathematical framework. The final product should be written in a cohesive fashion (i.e., the students should ensure they agree on common terminology, notation, etc.). In total, projects typically seem to end up being 50-60 pages, but there is no particular required length. Students will receive feedback from their own supervisors on the common introduction and the student’s own chapter, and are asked to provide an abstract + image to advertise their group project on the AGQ-CDT webpage.

Professional Training

Responsible Research and Innovation: During the 25/26 academic year first year students will have a series of workshops led by Dr. Michael Barany, exploring the role of individual identity in mathematical research and the impacts of mathematics on society and vice versa. We will discuss what lessons we can draw about doing research in a way that is ethical and meaningful both in an academic context, and with a view towards its wider impact on society.

Anchored-In: Provides professional development training for students, including career preparation, CV workshops, and skills training. Anchored In training begins in second year of the AGQ programme.

Glasgow Science Centre: Offers public engagement training focused on science events and exhibitions, helping STEM students develop skills to communicate their research effectively to a broad audience. Training begins in the second year of the AGQ programme.

Note: only for University of Edinburgh and Heriot-Watt University

As you will learn during the MI induction, generic MI PhD students choose one of the three streams: teaching, industry and outreach. Our CDT has alternative plans for the industry and outreach stream, but if you are interested in joining the MI teaching stream (for instance to obtain the relevant HE accreditations) please contact David Quinn at UoE.

Partners and Placement

The AGQ CDT maintains a diverse network of partners across industry, academia, and the third sector. Our Industry collaborators help shape a curriculum that is responsive to rapidly evolving market sectors where mathematicians may find employment. Third sector partners bring a social impact perspective, enabling students to apply their mathematical skills to meet societal challenges. Academic partnerships support international research, mentorship, and career opportunities. Students benefit from these partnerships through:

- CV writing and communication training
- Partner-led challenge-focused events
- Hack-a-thons and other computing challenges
- Placement preparation

In addition, all AGQ CDT students are required to complete an external placement during their four-year programme.

You can view our full list of partners on our website: [Partners – AGQ CDT](#). We strongly encourage students to propose new partners to the CDT which reflect their own interests, especially regarding placements. We will work with students where possible to form partnerships with existing contacts to meet placement degree requirements.

Equality, diversity and inclusion (EDI)

We adhere to the [EDI policies outlined by EPSRC](#). Beyond compliance, the AGQ CDT actively fosters inclusive learning environments, through our transparent governance structures and through our RRI trainings. Our commitment to EDI is also reflected in our partnership with [Piscopia](#) – a programme that encourages women and individuals from underrepresented gender identities to pursue PhDs in mathematics. We support student-led Piscopia initiatives aimed at demystifying the PhD application process and broadening awareness of academic career pathways.

In addition, we run [Count Me In](#), a cohort-based, six-week summer internship programme designed for undergraduates from underrepresented groups. Participants are paired with role models and a supportive peer network drawn from the AGQ CDT and wider university communities, to collaboratively tackle a small research problem. Now in its third year (2025), Count Me In has provided participants with valuable insights into research life, while offering meaningful mentoring opportunities for current AGQ CDT students.

Student Committee

The Student Committee represents the student body in discussions with the AGQ executive team, providing feedback and ensuring student voices are heard. Members are nominated by their peers to serve on the committee, with representation from each cohort and each AGQ university.

Student-led Activities

Retreat: Each year, normally in the spring, the entire AGQ community comes together for a multi-day retreat combining social activities with scientific workshops. The event offers a valuable opportunity to connect with peers, share research, and collaborate.

Student Conference: Organised and led by students, this annual event provides a platform to share research, collaborate, and gain experience delivering talks. The format can change each year, as it is shaped by the organising committee.

International Conference: Each year, students organise an international conference and select leading academics to invite from outside the AGQ community. It provides an opportunity to connect with the wider mathematics network, share research, and build collaborations.

Other AGQ Supported Activities: AGQ supports other CDT related activities proposed by AGQ students and supervisors. To request AGQ funds for an activity you are organising please complete this form: <https://forms.office.com/e/yxq0VcypVJ>.

Calendar of AGQ Activities

Please see the AGQ intranet website, <https://www.agq-cdt.org/intranet> (password: AGQCDT) for a complete list of the year's activities. Activities with required attendance will be clearly indicated, including which cohort should be in attendance. Upcoming events yet to be formally scheduled will also be mentioned on the intranet page.

Offices and Hot Desking

Heriot-Watt University:

As part of the Maths PhD programmes at HWU, you are also part of the [Maxwell Institute for Mathematical Sciences](#). The Maxwell Institute brings together research activities in mathematical sciences at the University of Edinburgh and Heriot-Watt University.

The Maxwell Institute is located at the Bayes Centre at Potterow (that is, on the George Square campus of the University of Edinburgh). Students spend their first year located here but are welcome to use the hot desk rooms at the HWU Campus as well. Once students enter their second year, they are based at the HWU Campus. See the post below for more information about the Bayes Centre.

We ask students led by HWU to arrange a meeting with our facilities officer (Lyn Ross: Lyn.Ross@hw.ac.uk) who will provide you with swipe access to room EM2.22 where you can book a desk. Once your access has been granted, you can book a desk space using these links:

[Maths Hot desking \(PHD students\) — Make a booking — Resource Booker](#)

<https://resourcebookeruk.hw.ac.uk/app/booking-types/cfe73f9d-db0e-4795-98b9-35e279e192ec>

Students who are led by UoE and UoG can contact the CDT Administrator (Beata Kohlbeek: B.Kohlbeek@hw.ac.uk) to arrange access to the hot desk area if they wish to use it on an ad hoc basis.

University of Edinburgh:

As part of the Maths PhD programmes at UoE, you are also part of the [Maxwell Institute for Mathematical Sciences](#). The Maxwell Institute brings together research activities in mathematical sciences at the University of Edinburgh and Heriot-Watt University.

First year PhD students are based in the Bayes Centre on central campus. Bayes is accessible Monday – Saturday between 7am and 10pm. Bayes Reception is staffed between 9-5 Monday – Friday. If you are accessing the space outside these hours, you must use your card and PIN to access the building.

The Bayes building is open-plan and our space is on the 5th floor of the building. You should not work on other floors of the building unless you have booked a meeting room for a particular purpose. You can work in the ICMS space but only if they do not have any events on. Please do not help yourselves to food, drink, etc on other floors of the building.

First year students get a priority to use of desks in Bayes. Desks are not allocated to individuals. If you are working in Bayes, you can use any unoccupied desk on the day you are in. The small, glass fronted offices are bookable by the calendars on the door. However, these should only be used for small group meetings. They should not be used as alternative desk/office space.

The James Clerk Maxwell Building (JCMB) at the King's Buildings (KB) where the School of

Mathematics is located and where your supervisors have their office space. Each research theme will host weekly online seminars in your research area, colloquia and other events that will be of interest for you. From second year, you will be based in JCMB.

University of Glasgow:

Please review the University's guidance on [PGR space Shared Principles of Use](#), particularly ensuring you are not occupying desk space unnecessarily when not in use.

First year PGR students have an office on the first floor of the Mathematics and Statistics building (which is technically the ground floor). There are 30 desks with the PGR office, which are classed as hot desks. Your CDT-issued laptop can be plugged into a monitor which resides on each desk within both floors. There is no booking system for this space, simply choose whatever desks are free.

There is also have a PGR suite on Level 2, which comprises multiple PGR offices with 10 desks in each. Due to the overall amount of PGR students the School has, students are moved from Level 1 to Level 2 in their second year of study, as and when students complete their studies, and they are given a desk within one of the offices, which will be their own desk until they fully complete their studies.

You also have access to book rooms in the Advanced Research Centre (ARC) you can do so by following this link: <https://uofglasgow.zoom.us/j/83856593345> more details are here about the space and the rooms, <https://www.gla.ac.uk/research/arc/researchersandstaff/roombooking/#>

To book the ARC level 3 hot desk space, you should do this via the help desk, more details are here <https://www.gla.ac.uk/research/arc/researchersandstaff/pgrspace/#bookingadesk>

You should use this link -

<https://glasgow.saasiteu.com/Login.aspx?Role=SelfServiceMobileStudent&Scope=SelfService&CommandId=NewServiceRequestByOfferingId&Tab=ServiceCatalog&Template=D895AFAA205B4DD1A52A936B57EB646C>

The password to book space is - ARC-3107-room

CDT Progression

CDT progression is determined by each institutions internal process with input from the CDT.

Annual Progress Review

Annual progression is dependent upon the progression boards of the student's primary institution. The CDT will provide advice to each institution's progression process, noting their coursework completion and engagement with training and research. A common feature of all three Universities' progression requirements is the requirement for students to complete an Annual Review, including the submission of a First Year Report. The First Year Report should typically survey the student's understanding of their chosen research field and should formulate the initial stage of their planned thesis research. For instance, the First Year Report may state

an open research problem, the background needed to understand the statement, and the first steps planned.

Heriot- Watt University

<https://heriotwatt.sharepoint.com/sites/macspgr/SitePages/Progression.aspx?CT=1726219784809&OR=OWA-NT-Mail&CID=8069e103-eacf-a6d1-c072-7cc902fa81f9&xodata=MDV8MDJ8SmVubmllLldpc2VtYW5AZ2xhc2dvdy5hYy51a3xkYzExYTE3NDE5ZDk0M2EwOTIxMDA4ZGNkM2Q2ZDViMHw2ZTcyNWMyOTc2M2E0ZjUwODFmMjJlMjU0ZjAxMzNjOHwxfDB8NjM4NjE4MTY2ODcxODkxNzY4fVua25vd258VfdGcGJHWNiM2Q4ZXIKV0lqb2lNQzR3TGpBd01EQWlMQ0pRSWpvaVYybHVNeKlpTENKQIRpSTZJazFoYVd3aUxDSlhWQ0k2TW4wPXwwfHx8&sdata=b2o2YWxodWhhZm4rSGFneEkwcGVlQ3oyVmR2OFMrM0o0Nzl4ZnBPUk13MD0%3d>

University of Edinburgh

<https://uoe.sharepoint.com/sites/maths-GradSchool/SitePages/Annual-Reviews.aspx?csf=1&web=1&e=L3Y75V&xodata=MDV8MDJ8SmVubmllLldpc2VtYW5AZ2xhc2dvdy5hYy51a3wwY2ZzNzU2ZDFInzU0OGQyMjA3OTA4ZGNkMzZiZGlzYXw2ZTcyNWMyOTc2M2E0ZjUwODFmMjJlMjU0ZjAxMzNjOHwxfDB8NjM4NjE3NzA3NjA2NTM3NDgxVua25vd258VfdGcGJHWNiM2Q4ZXIKV0lqb2lNQzR3TGpBd01EQWlMQ0pRSWpvaVYybHVNeKlpTENKQIRpSTZJazFoYVd3aUxDSlhWQ0k2TW4wPXwwfHx8&sdata=SjVUSE56VUtKLzhISzU0SzlLU0hwSWcrQlpFYmVxVEZVdCs0U3BtUG9EQT0%3d>

University of Glasgow

[University of Glasgow - Colleges - College of Science & Engineering - Graduate School - Postgraduate research study - Progression](#)

Alternative Exit Awards

Students exiting the programme without meeting the degree requirements may be eligible for the award of:

- Postgraduate diploma (PGDip): this is available to students completing at least 120 credits of coursework.
- MScR: this is available to students who complete 90 credits of coursework and are awarded 90 credits of research credit by the Exam board, based on their first-year report, or a later submission of a MScR dissertation.

Graduation

Please follow the relevant Graduation process of the University in which you are registered.

CDT Training Funds

Centrally organised and compulsory AGQ activities will be funded from the central AGQ budget.

Stipend

In addition to having their tuition fees paid (at the 'home' rate), all CDT students receive an annual stipend, paid monthly over an academic year (paid via their home institution, not the CDT). The standard stipend for full-time students as set by UKRI in 2025-26 is [£20,780](#).

It is important students ensure their bank details are up to date at their home institution to ensure no delays to their monthly payments. Any stipend overpayment must be returned to the University upon notification.

Heriot-Watt University:

You may have already received emails to arrange your scholarship, but if you have not, you should contact Sara Wood (K.Wood@hw.ac.uk) in the Finance Office to complete a bank details form to arrange your stipends.

University of Edinburgh:

To arrange your stipend payments, you need to return your completed Non Taxable Scholarship Payment Form to pgresearch@maths.ed.ac.uk. Your initial one-off payment will be arranged once you are a fully matriculated student. Once your stipend has been set up, you can [change your bank account details here](#).

University of Glasgow:

To ensure your bank details are up to date, please follow [the instructions here](#). The [University stipend payment calendar](#) for 2024 is also available to check expected payment dates.

Research Training Support Grant (RTSG)

All AGQ students are eligible for Research Training Support Grant (RTSG) funds, which is to be used to pay for expenses, e.g., consumables and travel, which the student, their supervisor(s) or their School deem to be in direct support of the student's PhD research.

- Students are allocated an RTSG allowance to be used throughout the duration of their standard 4-year studentship. Each year the annual travel budget for the coming year will be announced well in advance, as will be the allowable carry-forward into the following year.
 - The budget for all students in their first year and second year is set at £1500, of which £1000 may be carried forward.
 - Budgets for students in their third year and afterwards will be announced by the end of May 2026, following a budget review of the initial grant period.
- RTSG allowances are not increased to cover extensions, however students can spend their remaining RTSG during extension periods.
- It is advised for students to keep a record of how much RTSG funding they have claimed; however, the CDT will have a record of this also.
- RTSG claims should **not** be made retrospectively, i.e., students must seek approval to spend their RTSG in advance before they submit a claim.

Examples of RTSG expenses are:

- UK, EU and overseas conferences and summer schools;
- Purchase of additional equipment e.g., computer (an initial computer is provided by the CDT from another account), cameras, tape recorders, films;
- Training courses;
- Fieldwork and data collection costs and expenses, e.g., participant payments (e.g., via subject money requests), vouchers, printing, stationery, telephone calls;
- Reimbursement of interpreters, guides, assistants;
- Books and other reading material not available through libraries.

If a student is unsure as to whether they may claim for a particular item, they should contact the AGQ CDT Coordinator (queries@agq-cdt.org).

Vaccinations for International Travel

If you need to receive vaccinations in order to travel to a conference, please note that the cost can be reimbursed. These expenses should be claimed against your RTSG.

Instructions for spending RTSG

There are various ways to spend your RTSG as detailed below, however, before you can spend any of your RTSG, you must seek approval from the relevant budget holder in advance. Please see below for details as split out by home institution.

Heriot-Watt University:

Discuss any travel plans and requirements with your supervisor. Please ensure to read over the directions and guidelines provided on the MACS PhD Finance page *before* arranging your travel.

Once you have filled out the travel authorization form (which can be found at MACS PhD Finance), send it for initial approval to your supervisor. Once signed, send it for final approval to: macs-pgr-support@hw.ac.uk

Contact Beata (b.kohlбек@hw.ac.uk) for more information.

University of Edinburgh:

All students whose funding is administered by the School of Mathematics, regardless of the source (i.e. School, research grant, etc.), are required to follow our pre-approval process before any expense is incurred. You should send a completed [School Conference Travel Form](#) (signed by your supervisor) to pgresearch@maths.ed.ac.uk along with a [Travel Risk Assessment](#).

Once you have received pre-approval, you can make travel arrangements and incur costs up to the limit of your approval. The University's travel management company, Diversity Travel, can be used when making travel arrangements, but this is not necessary for PhD students.

Please read our guidance on making Student Expense claims [here](#).

University of Glasgow:

At the University of Glasgow the budget holder, i.e., the individual who will need to approve each RTSG spend, will be your principal supervisor (as per your principal supervisor listed at your home institution). Each student will have their own unique project sub code where their RTSG funds will be held for their use. This is an account code where funds are held, i.e., similar to a 'bank account' for your RTSG funds.

Please contact the AGQ CDT Coordinator for confirmation of your unique project sub code and budget holder (principal supervisor).

Expense Claims

Should you need to claim for expenses you have paid for yourself, please follow the guidance on [the Student Expenses page](#) for full details of how to submit a claim directly via MyCampus using the Student Expenses tile. Please note, you should still seek approval from the budget holder **in advance** of making purchases you will later want to claim back as an expense using your RTSG allowance.

Selective Travel

Should you want to purchase travel and/or accommodation, e.g., to attend a conference, you should do so via the University approved travel supplier, Selective Travel. The information on how to book travel/ accommodation via Selective Travel is located on the [University Travel Hub webpage](#).

Please note:

- You will need to input your unique project sub code when making any bookings via Selective Travel.
- You will need to [apply for travel insurance](#) via the University.
- As of September 2022, the University no longer permits staff or students to book accommodation via **Airbnb**, as they are not regulated in a way that meets the University's requirements. As such, you will not be able to use your RTSG to cover costs for Airbnb bookings, including via an expense claim.

Disabled Students' Allowance (DSA)

Disabled Students' Allowance (DSA) is intended to help with additional expenditure for the costs of study-related requirements that may be incurred as a result of disability, mental health problems or specific learning difficulties that mean additional support is needed to undertake a UKRI funded studentship. This allowance can cover the cost of non-medical personal assistance, items of specialist equipment, extra travel costs and general expenses.

All Research Councils have adopted a harmonised approach to DSA, with additional guidance available on the [UKRI website](#).

Heriot-Watt University:

Heriot-Watt University's [Disability Service](#) will undertake the assessment of need and provide costs for students where required. If you have any questions, please contact your Disability Adviser or email disability@hw.ac.uk.

University of Edinburgh:

The University's [Disability and Learning Support Service](#) can offer a range of support based on your individual needs and how your disability, learning difference, neurodiversity or health condition affects your studies.

University of Glasgow:

The University of Glasgow's [Disability Service](#) will undertake the assessment of need and provide costs for students where required. The University will then claim back eligible costs at the end of the academic year from UKRI by submitting a completed DSA claim via the CDT, before the deadline of 31 October.

Students should contact their Disability Adviser or named contact on disability matters for advice.

Studentship Regulations

Below are a list and summary of the primary regulations relating to a UKRI funded studentship.

Attendance

Studentships are intended to be held on a continuous basis, however, a student may on occasion need to suspend their studies, for example as a result of their own persistent health problems or those of dependants, or to take up the opportunity of a temporary, short-term post/internship which can be justified as being highly relevant to their thesis or research training.

A period of suspension, called a Leave of Absence (LoA), cannot exceed one calendar year in any one instance, and the total periods of suspension should not exceed one calendar year during the lifetime of the award. All leave must be approved by the student's supervisory team.

Heriot-Watt University:

Students can apply for a Temporary Suspension of Studies (TSS) if they require to take time away from their studies, e.g. for health or personal reasons. You can request a TSS through your student portal or by selecting the online form [here](#).

When applying, students should provide supporting documents where possible, e.g. a letter from your healthcare professional. Students should apply for TSS in advance of the time required away from their studies, however, in some cases students may need to apply for TSS retrospectively.

University of Edinburgh:

An [Authorised Interruption of Study](#) stops the clock on your PhD and allows you to take some time away from your research. An interruption is allowable when you are temporarily unable to continue with your studies for a variety of reasons such as health reasons (mental and physical), maternity/ paternity leave, internships, financial circumstances, personal reasons, etc.

You must submit a request for an interruption which should be approved by your supervisor to

the Graduate School (pgresearch@maths.ed.ac.uk). You should try to include supporting evidence for your request. We will then send it to College for approval and processing. If your request is approved, your maximum end date will change as the length of time you are interrupted for is added to the end of your PhD.

A [Leave of Absence](#) is required where students undertake compulsory and optional activities related to, or part of, the programme of study away from campus in Edinburgh. Examples of study related activity include conferences, workshops, projects or placements, paid or unpaid placement activities including work placements, internships or other research activities.

- Absences less than 5 days should be agreed directly between the student and the supervisor and recorded as Work-related on the [Absence system](#).
- Absences between 5 and 30 days should be requested via [the student form](#).
- For absences greater than 30 days, students need to submit a [Leave of Absence request form](#) to their supervisor for approval and then send this to pgresearch@maths.ed.ac.uk. If approved, the Graduate School will record the LoA on Euclid. It is recommended that the [LoA checklist](#) is completed for absences between 3 and 12 months.

University of Glasgow:

The student's supervisor(s) and PG Convenor must approve a LoA Request Form (click [here](#) to download) before it is submitted to the CoSE Graduate School (scieng-gradschool@glasgow.ac.uk) for the Dean to provide final signoff. Students submitting LoA requests must provide medical evidence which meets the requirements of the University. Retrospective requests cannot be considered.

Please note once a LoA request has been submitted to the CoSE Graduate School for review, it can take up to three weeks for the outcome to be communicated.

Please see the University's [Student Absence Policy](#) for further details on attendance.

Sick Leave and Sick Pay

Heriot-Watt University:

If a student gets ill and is unable to study for an extended period of time, they should make their supervisor aware of their situation. For extended durations, students should request a Temporary Suspension of Studies (TSS) (see above) and provide a medical note from their doctor.

University of Edinburgh:

In the case of minor ailments and short-term illnesses that last less than 7 days and are therefore not covered by a medical certificate (for example; colds, flu etc.), the stipend will continue to be paid as normal, but no funded extension or programme extension will be provided.

For sick leave between 1 and 4 weeks, you should inform your supervisor and submit a PGR Paid Sick Leave form and medical certificate to pgresearch@maths.ed.ac.uk. For sick leave over 4 weeks, you also need to complete an interruption request form.

Please see our [Sick Leave guidance](#) for more information.

University of Glasgow:

CDT students can take up to 13 weeks paid sick leave within any 12-month period, and their studentship will be extended accordingly. Beyond 13 weeks, studentships should be suspended. Suspensions on account of illness cannot normally exceed 12 months this cannot be applied retrospectively.

Students cannot request sick leave where an absence is less than one week (5 working days), as the expectation is that short absences should be incorporated into the studentship. We ask students to still record such absences via [MyCampus](#), to help support any potential future requests for extensions and/or changes from full-time study to part-time study.

Please see the University's [Student Absence Policy](#) for further details on sick leave.

Annual Leave

Heriot-Watt University:

PhD students are entitled to six weeks of holidays per year and they are responsible for seeking the approval of the primary supervisor in advance of making holiday arrangements.

University of Edinburgh:

Students are expected to be present for most of the normal working day. If you expect to be absent and use your annual leave, you must inform your supervisor and submit a request form [here](#)

Annual leave allowance is eight weeks per calendar year from January to December which includes 4 compulsory days for the Winter Vacation period. These 4 compulsory days are required to be kept each year for the period between Christmas & New Year when the University is closed. As with staff, you can carry forward a maximum of 5 days leave per year. Leave should be requested in advance of the dates of absence.

University of Glasgow:

Full-time students are allowed up to eight weeks annual leave (including public holidays) each academic year as approved by their supervisor(s). If a studentship covers a period of less than 12 months in any academic year, a student's holiday entitlement will be reduced on a pro-rata basis.

At the University of Glasgow students are not required to update the CDT with their annual leave dates once these have been approved by their supervisor(s), however these dates should be recorded within [MyCampus](#).

Please see the University's [PGR Code of Practice](#) for further details on annual leave.

Maternity, Paternity, Parental and Adoption Leave

Heriot-Watt University:

This should be requested through a Temporary Suspension of Studies (TSS) (see above). Durations and conditions are available in the [Code of Practice](#).

University of Edinburgh:

Please see the [Sick Leave and Parental Leave guidance](#) and our page on [Parental Leave](#).

University of Glasgow:

Please see the [University's Student Maternity, Maternity Support and Adoption policy](#) for further details.

Full-time and Part-time Study Arrangements

The AGQ programme is designed to be taken on a full-time basis, and study on a part-time basis. The CDT will consider requests for part-time study on a case by case basis. Part time periods of study proceed at the level of 50% full-time equivalent (FTE) minimum (with duration doubled accordingly) and stipends payments prorated for part-time students.

It is also possible for a student to apply to transfer between a full-time and part-time studentship, or vice versa. Students should contact their supervisor in the first instance to discuss a change to their study arrangements, before contacting the CDT for approval. UKRI recommends that, where possible, changes to study arrangements should take effect from the beginning of a quarter, i.e., 1 October, 1 January, 1 April, or 1 July.

Whilst it is expected that transfers would only occur once during a studentship, it is recognised that there may be exceptional circumstances, such as changes to domestic arrangements or undertaking fixed term part-time employment, where a student needs to revert to their original status. Such fixed-period transfers will be considered on a case-by-case basis by the CDT and UKRI.

The UKRI rules governing change of study arrangement are:

1. A case cannot be considered if it is made in the last six months of the award or will apply only to the last six months of the award except in very exceptional circumstances, i.e., illness or students returning from maternity leave. The CDT must refer all such cases to UKRI for approval, so please allow sufficient time for this to be processed.
2. A transfer will not normally be allowed for acute health problems where suspension of the award is the appropriate course of action. However, where a health problem might prevent a student from permanently studying on a full-time basis, a case for a transfer to part-time can be considered.
3. A transfer from part-time to full-time cannot involve employment that would prevent the student from working on the PhD on a full-time basis.
4. A transfer from full-time to part-time will be considered where a change in domestic circumstances means that a dependant requires more of the award holder's time, or where the award holder has taken up part-time employment.
5. Fixed-period transfers are unable to be considered within the taught year of the programme, i.e., during Stage 1 of the programme (first year).

Working While Studying

UKRI funded students are permitted to undertake a certain amount of paid teaching or other research work during their studentship provided that they spend a minimum of 1,800 hours each academic year on their doctoral research and research training. Their programme of postgraduate training must be compatible with such work and their primary supervisor must formally approve this.

Where AGQ CDT students undertake demonstration or teaching, or other types of employment at their institution, they should be paid for this in addition to any stipend they receive. It should not be treated as a compulsory element of the award or of any research training.

Students may undertake a small amount of other paid work either in term time or during holidays, but the UKRI does not encourage such work, especially during the times when students are expected to be fully engaged in research training and thesis preparation. Student placements are part of the AGQ Degree Programme and therefore not considered as other work.

Full-time studentship award holders cannot hold either a full-time job, or a permanent part-time job, during the period of their award. Part-time UKRI studentship award holders cannot hold a full-time job. Full-time studentship award holders cannot change to part-time for reasons of employment during the final six months of their studentship.

Change of Supervisor

The CDT Directors must be kept informed of all changes to supervisory teams so we can ensure continued support for our students, as well as to make the required administrative updates to University systems.

In the rare event that a student needs to change their supervisor(s) for any reason, e.g., a supervisor is leaving the University, they should first discuss with their existing supervisory team to establish a possible suitable replacement in the first instance. Once a possible replacement has been established, the student and/or their existing supervisor(s) should contact the CDT Directors (copied to queries@agq-cdt.org) to discuss. Please note, possible replacement supervisors should not be approached before a discussion with the CDT Directors has taken place. If a student feels they would like to discuss their supervisory arrangements confidentially they should contact the CDT Directors or the AGQ CDT Coordinator.

Plagiarism

The CDT's degrees and other academic awards are given in recognition of a student's personal achievement. All work submitted by students for assessment is accepted on the understanding that it is the student's own effort.

Plagiarism is defined as the submission or presentation of work, in any form, which is not one's own, without acknowledgement of the sources. Plagiarism includes inappropriate collaboration with others. It is important to note that inappropriate collaboration with others includes inappropriate interaction with any other student, outside agency, website or software that generates assessment responses. Special cases of plagiarism can arise from a student using their own previous work (termed auto-plagiarism or self-plagiarism). Self-plagiarism includes using work that has already been submitted for assessment at this University or for any other academic award.

Heriot-Watt University:

Please read Heriot-Watt University's [plagiarism policy](#).

University of Edinburgh:

Please read the University's information on [Academic misconduct](#) (including plagiarism), and the [Academic Misconduct Investigation Procedures](#).

University of Glasgow:

Please make yourself familiar with the University's [plagiarism policy](#).

Changes of Thesis Title and/or Research Direction

Minor changes to thesis titles and research outlines do not need to be referred to or approved by the CDT, however, significant changes to the title and/or focus of research do need to be approved by the CDT **in advance**. Please note, approval for significant changes will not be granted unless a clear justification is provided.

Thesis Submission

Please note that once a studentship has ended, students will no longer have access to their RTSG and/or any additional CDT funding opportunities reserved for AGQ CDT students.

Heriot-Watt University:

Students are expected to submit their Initial Thesis by the end date of their four-year studentship. It is a good idea to familiarise yourself with the thesis submission requirements well in advance of when you are due to submit: [Thesis Submission and Examination - Information for Students](#). If you reach your HWU period of studies end date and have not submitted your Initial Thesis, you will be required to apply for an [extension](#) to keep your HWU record active.

University of Edinburgh:

Students should submit their thesis no later than their Maximum End Date of Programme (as shown in the students EUCLID account). Any student wishing to submit their thesis earlier than three months prior to the end of their Prescribed End Date of Programme must have the permission of the College Postgraduate Committee. Please email pgrcse@ed.ac.uk for guidance on early submission and the required form.

Students who feel that they are not going to be able to submit their thesis by their Maximum End Date can make an application for an [extension](#). You must contact your supervisor to discuss your circumstances. When making a request for an extension you must have supporting documentation to support your case and must also submit a plan and/ or anticipated timetable for the completion of the remainder of your thesis. After your request has been reviewed within the School, it is sent to College for a final decision. Extension Requests should be delayed until it is clear that one is required i.e. 2-3 months prior to the Maximum End Date.

University of Glasgow:

All students should submit their thesis by the end of their four-year studentship, via the [CoSE submission process](#). If a student is unable to submit within their funded period, they need to apply for an extension. If a student submits their thesis before the end of their studentship, the date of submission will become the studentship end date and no further stipend payments will be made, with any overpaid funds being reclaimed. Where a student continues to undertake work that is directly linked to their thesis, they can continue to receive funding until the end of the quarter in which the thesis was first submitted.

CDT Acknowledgement and Open Access

All articles, abstracts and other work/patents published by CDT students relating to their PhD research should include acknowledgement of the funder (UKRI) and the funder grant reference (EP/Y035232/1). This should be in the following format:

[Student name]’s work was supported by the UKRI Centre for Doctoral Training in Algebra, Geometry and Quantum Fields (AGQ), Grant Number EP/Y035232/1

Please report your publications to the CDT (journal name, title of article and details of any dataset(s) associated with the publication). Students are also encouraged to identify themselves as members of the Centre for Doctoral Training in Algebra, Geometry and Quantum Fields (AGQ CDT) in their email signatures.

Acknowledgement is a requirement to enable open access (OA) to articles, as well as access to the University’s OA fund. OA is the ability to freely access, download and reuse research outputs (particularly in the context of publicly funded research) – it refers largely to journal articles and conference proceedings.

Heriot-Watt University:

For information about Heriot-Watt University’s open access policies, please see [here](#).

University of Edinburgh:

Please read the University’s guidance on [Open Access](#).

University of Glasgow:

For Open Access details, please see [here](#). In addition, publications should also be uploaded to [Enlighten](#).

Post Thesis Submission

Researchfish

Researchfish® is the system that the UK Research Councils use to gather feedback from all Research Council funded researchers about the outcomes from their work. The Research Councils agreed that it was important for Research Council funded doctoral students to also be able to report on their activities and successes, how they contribute to their respective areas of research, and how they engage with partner organisations and communities.

CDT students are responsible for providing information about the outcomes from their studentship. Once a studentship has been added to Researchfish (typically during the 3rd year of funding), students will be invited to enter and submit data every year until three years after the studentship has finished (since many outcomes occur towards or past the end of studentships). Principal supervisors should also have been given access to the studentship details on Researchfish (added as a ‘team member’) and will be able to help in providing the outcomes information.

Students can enter outcomes data at any time but will specifically be asked to confirm that all their information is accurate and complete during the annual Submission Period. The Submission Period falls between early February and mid-March each year.

Research Councils will not use Researchfish data to assess the performance of individual students or review the progress of individual studentships. In addition, there is no expectation that doctoral students will necessarily have specific outcomes or outputs to report.

If any student has problems accessing their Researchfish account, please refer to the UKRI website [here](#) for guidance or contact the Researchfish support help desk at support@researchfish.com.

First Destination Data

UKRI requires CDTs to provide data on the first employment destinations of all UKRI funded students. The Higher Education Statistics Agency (HESA) collects destination data on behalf of all the research councils and Universities must ensure that they complete the research council funding fields accurately. CDTs may also be required to provide some first destination data for their students as part of the annual report.

Publishing Research

Students are advised to follow UKRI guidance on publishing their research [here](#). UKRI funded students are strongly encouraged to offer copies of any machine-readable data created or repurposed during the lifetime of their award for deposit in the UK Data Service. Further guidance on data deposit with the UK Data Service is available [here](#). UKRI funded students who are likely to produce data of any kind as a result of their grant are recommended to read the UK Data Service data management guides found [here](#).

Data Protection

Please see data protection policies below.

[Heriot-Watt University data protection policy.](#)

[University of Edinburgh data protection policy.](#)

[University of Glasgow data protection policy.](#)

Complaints

Complaints regarding any aspect of the AGQ CDT should be raised with the AGQ CDT Coordinator at your home institution in the first instance. If unresolved, your complaint will be escalated to the AGQ CDT Executive Team next. Should a complaint remain unresolved, depending on the nature of the complaint, it will then be escalated to the University of Glasgow or the UKRI.

Please note that in order to properly escalate complaints it may be necessary for the nature of the complaint to be shared cross-institutionally between executive team members.

The Quality Assurance Agency (QAA) have published guidance for students about how to deal with complaints about universities online [here](#).

