Centre for Doctoral Training

Mathematics of Random Systems

Centre for Doctoral Training

in Mathematics of Random Systems:

Analysis, Modelling and Algorithms

2026 Cohort

Updated 07 October 2026

This handbook applies to students starting at the Centre for Doctoral Training in Mathematics of Random Systems: Analysis, Modelling and Algorithms in Michaelmas term 2026. The information in this handbook may be different for students starting in other years.

The information in this handbook is accurate as of **7 October 2026**, however it may be necessary for changes to be made in certain circumstances, please see the Changes to Courses webpage for more information. If such changes are made the department will publish a new version of this handbook together with a list of the changes and students will be informed.

Enquires regarding this document should be directed to the CDT Random Systems administrator at randomsystems@maths.ox.ac.uk

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Welcome from the Director

Welcome and congratulations for your admission to the **Centre for Doctoral Training in the Mathematics of Random Systems!**

You are about to commence a 4-year comprehensive training programme with the aims of bringing you to the frontier of scientific research in Probability, Stochastic Analysis, Stochastic Modelling, stochastic computational methods and applications in physics, quantitative finance, biology and data science.

Our goal is to prepare you for your research project by providing you with solid training in core skills in probability theory, stochastic analysis, mathematical modelling, data analysis, stochastic simulation and probabilistic algorithms. In the first year, you will be able to select four courses that best align with your interest area and undertake a supervised research project. This research project is then expected to evolve into a doctoral thesis, which will be the focus of the next 3 years.

Our Centre was launched in 2019 through a partnership between UK Research and Innovation (UKRI) and three world-class departments in the area of probabilistic modelling, stochastic analysis and their applications: the Oxford Mathematical Institute, the Oxford Department of Statistics, and the Department of Mathematics, Imperial College London, with the ambition of training the next generation of academic and industry experts in stochastic analysis, stochastic modelling, advanced computational methods and Data Science. Our Centre also benefits from the generous support of several industry partners.

This handbook is designed to help you understand the course structure, the requirements of the course, the key contacts and who you can go to if you need support. Please be aware that details may be subject to change. We encourage you to check the CDT website for the most up-to-date information:

https://www.randomsystems-cdt.ac.uk

We wish you every success in your studies!

Prof Rama Cont
Director
director@randomsystems-cdt.ac.uk

The CDT Steering Committee

Professor Rama Cont, Director (director@randomsystems-cdt.ac.uk)

Rama Cont is Professor of Mathematics and Chair of Mathematical Finance at the Oxford Mathematical Institute and Head of the Oxford Mathematical and Computational Finance Group. Rama's research focuses on stochastic analysis, stochastic processes and mathematical modelling in finance, in particular the modelling of extreme market risks and systemic risk. Areas of study include pathwise methods in stochastic analysis, functional Ito calculus, mathematical modelling in finance, systemic risk and financial stability, mathematical foundations of data science and data-driven decision systems.

Professor Ben Hambly, Academic Deputy Director (hambly@maths.ox.ac.uk)

Ben Hambly is Professor of Mathematics at the University of Oxford. Ben's research interests are in probability, stochastic processes, financial mathematics and fractals. In particular pricing American style options, credit and correlated default, electricity price modelling and swing options, stochastic partial differential equations models for systemic risk and limit order books, diffusion processes on fractals, spectral problems for fractal domains, geometry of random fractals, rough paths and levy area, branching processes, general branching processes, branching random walk, and particle systems and random matrices.

Professor Massimiliano Gubinelli (gubinelli@maths.ox.ac.uk)

Massimiliano Gubinelli is the Wallis Professor of Mathematics and head of the Stochastic Analysis Group at the Mathematical Institute. He is known for seminal contributions to stochastic analysis and the theory of controlled paths. His current area of research is stochastic analysis in particular in connection with problems of constructive quantum field theory. The main focus is to develop tools and concepts which are suitable to describe and analyse the pathwise behaviour of quantum or random fields, including their description via partial differential equations and renormalization group ideas.

Professor Christoph Reisinger, Management Committee Member

(Christoph.Reisinger@maths.ox.ac.uk)

Christoph Reisinger is Professor of Applied Mathematics at Oxford University's Mathematical Institute. His research covers various aspects of the development, analysis and implementation of numerical algorithms for partial differential equations and stochastic (partial) differential equations, such as those arising in financial engineering. As well as his specific interests in numerical analysis Christoph's mathematical finance research includes work on derivative valuation and counterparty credit risk (in particular, large pool contagion models), quantification of hedging errors, model calibration (FX, equity, credit) and investment and incomplete markets.

Professor Jared Tanner, Management Committee Member

(Jared.Tanner@maths.ox.ac.uk)

Jared Tanner is Professor of the Mathematics of Information at the Mathematical Institute, University of Oxford. Jared's focus is on the design, analysis, and application of numerical algorithms for information inspired applications in signal & image processing. Specific contributions include the derivation of sampling theorems in compressed sensing using techniques from stochastic geometry and the design and analysis of efficient algorithms for matrix completion which minimise over higher dimensional subspaces as the reliability of the data warrants. These techniques allow more efficient information acquisition as well as the ability to cope with missing data. Recent interests include new models for low dimensional structure in heterogeneous data and topological data analysis.

Brian Mackenwells, CDT Administrator, University of Oxford (randomsystems@maths.ox.ac.uk)

Room S0.20, Mathematical Institute, Oxford

Brian Mackenwells joined the Mathematical Institute as the Mathematics of Random Systems CDT Administrator in September 2024.

Before joining the CDT he has worked in professional services within the University for almost ten years, particularly on supporting academics with their public engagement and outreach.

Brian can be reached at either mackenwells@maths.ox.ac.uk, or randomsystems@maths.ox.ac.uk. Please do not hesitate to email him with any questions about your time as part of the CDT.

For the full list of CDT Steering Committee members, please visit https://www.randomsystems-cdt.ac.uk/management-committee

About the CDT

The Centre for Doctoral Training in Mathematics of Random Systems: Analysis, Modelling and Algorithms is a comprehensive doctoral programme focused on probabilistic modelling, stochastic analysis and their applications based at the Oxford Mathematical Institute, with the ambition of training the next generation of academic and industry experts in stochastic modelling, advanced computational methods and Data Science.

In the first year, you will be invited to select **four courses** across Mathematics, Statistics and Computer Science departments, and choose a **main research topic** and a **research supervisor** by January 2027. This research project will then be expected to evolve into a DPhil thesis in years two to four.

Your progress will be assessed by the end of Michaelmas Term in year 2 through a **Transfer of status**, and again by the end of Michaelmas term in year 4 through a **Confirmation of status**. Both milestones are discussed in more detail in the "progression and progress monitoring" section of this handbook. You will need to submit a sample of your written work and pass an oral examination for each assessment.

As part of your 4-year doctoral programme, in addition to your main research projects you are required to take part in **CDT activities**. These include regular seminars and workshops scheduled both at Oxford and Imperial College London, as well as training in transferrable skills such as communication, ethics and team-working. **Failure to attend compulsory CDT activities may result in the loss of your funding.**

General advice for your time with the CDT

- **Work together**. You will learn as much from each other as you will from members of the faculty.
- **Don't struggle in silence**. Make use of your peers, and departmental and college support.
- **Be curious and explore.** Even if you are interested in a particular sub-topic, stay open-minded and try to attend seminars and lectures on other areas of mathematics and beyond! Things you may have never heard of may inspire you and end up being useful for your research.
- Pass on comments and suggestions to the directors and administrator so that the CDT experience is continually improved.
- Make the most of your interactions with industry. They can provide stimulation for your research projects (and the company might want to employ you).

From year 2

- Come to seminars. As well as broadening your scientific knowledge, attending seminars is useful for developing your own presentational skills. If a seminar strikes you as good or bad think about what makes it so. Don't worry if the seminar is not in your precise research area - it's still worth attending. Don't worry if you don't understand everything in seminars: very few people do!
- Keep updated with the department run "Fridays@4" activities. They have a particular focus on graduate students and early career researchers. They have included skills sessions, careers events, Department Colloquia and junior colloquia.
- **Keep talking to each other, both within your cohort and to those in other years**.
- Be kind to yourself.

Your fellow students: the 2026 Cohort

Sepehr Heidari Advary

Claudia Di Nunzio

Matvei Zaitsev

CDT Calendar

Exact University of Oxford term dates can be found at:

- https://www.ox.ac.uk/about/facts-and-figures/dates-of-term

Timeline for key milestones and events during your DPhil.

Year 1 (2026/27)	
	Departmental and college Induction Weeks
6th October 2025	DPhil Induction Day, followed by a drinks reception
Sunday, 11th October 2026	Start of the programme
Time to select the courses you are interested in	
MICHAELMAS TERM (11TH OCT – 5TH DEC 2026)	
December 2025	December CDT Dinner
Time to select the courses you are interested in	
HILARY TERM (17TH JANUARY – 13TH MARCH)	
Before the start of Hilary term 2026	Your supervisor for DPhil and a title for research thesis should be confirmed by now
TRINITY TERM (25TH APRIL – 29th JUNE)	
June 2026	June CDT Dinner
Summer 2027	Sign up to help with at least two classes in Michaelmas Term 2026
Summer 2027	Complete 40 hours of Transferable Skills Training
Year 2 (2027/28)	
Week 0 Michaelmas term 2027	Teacher training session
Michaelmas term 2027	Teach at least two classes
End of Michaelmas term 2027	Complete transfer of status

Year 3 (2028/29)	
Before confirmation of status	Teach at least three additional classes
Year 4 (2029/30)	
End of Michaelmas Term	Complete confirmation of status
End of Trinity Term 2030	Submission of thesis

Please let us know if you have a disability that requires accommodations, a health or economic challenge that may impact your time in the CDT, or a preferred gender pronoun.

If you have a schedule conflict due to your religious holiday, or other concerns that impede your ability to fully take part in the CDT, please tell us.

We want to create a welcoming, inclusive and equitable environment for all our students and welcome your input on how to achieve this.

Course Structure

First Year

You will be required to select four courses from this list.

Each course you select will include an appropriate assessment for which you will be awarded a pass or fail. You will be required to pass every course to progress in this programme; those failing any of their courses may need to do additional work to demonstrate competence, as well as may be required to discuss their performance with the course directors. Your results should be forwarded to the CDT Administrator via email.

In addition to the mandatory courses, you will need to complete 40 hours of Transferable Skills Training before the Transfer of Status in Michaelmas Term of 2nd Year.

CDT Workshops

There will be monthly CDT events, which will alternate between the Oxford Mathematical Institute and the Department of Mathematics, Imperial College London. These are likely to be a mix of seminars by CDT students and faculty. Students will be required to attend the Oxford-based events throughout their time in the CD, and are encouraged to attend the Imperial events as they will be highly relevant to the work taking place in the CDT.

Years Two to Four

You must fulfil the teaching requirements and skills training in order to progress through the DPhil milestones (see below for details).

Years 2, 3 and 4 are dedicated to your research project, under supervision of the advisor.

Your progress and academic support needs will be monitored through a regular supervision reporting (see below for details).

Throughout the 4-year period you will be invited to participate in cohort activities, such as the monthly CDT seminars/workshops in Oxford and London. **Failure to take part in compulsory CDT activities throughout the four years may result in the loss of your funding.**

Transferable Skills Training

You will need to ensure **by the time you reach your Transfer of Status** (end of Michaelmas Term in Year 2), you have spent a **minimum of 5 days** (40 h total, one full day = 8 hours) on transferable skills courses.

A maximum of 8 of these hours can be language courses.

How to find eligible skills training courses?

- Visit the Training and Development page on the divisional MPLS directory
- Consider courses run by career services, IT services, etc
- Try other programmes and platforms linked on the CDT Random Systems webpage

If in doubt, just get in touch with the CDT Administrator on randomsystems@maths.ox.ac.uk

All those involved with research at Oxford are expected to read and abide by the University's Research Integrity Policy

Compulsory Research Integrity course

Students in the MPLS Division (which the Mathematical Institute is a part of) are required to complete the online Research Integrity course **by the time they apply for Transfer of Status**. The Division also offers face-to-face Research Integrity training which complements the online course. All CDT students must complete this training before transfer of status.

Teaching Development in Oxford

All research students are asked to undertake teaching within the department. More specifically, as a minimum, students are required to act as a **Teaching Assistant for at least two sets of classes prior to Transfer of status and an additional three sets prior to Confirmation of status.** However, students will generally be expected to act as a Teaching Assistant for two sets of undergraduate classes per year.

Normally, a set of undergraduate classes is four 90-minute sessions. We recommend that teaching time does not exceed six hours in any week.

Once you have met the department's teacher training requirement it may be possible to meet this expectation by acting as a Class Tutor in addition to, or instead of, acting as a Teaching Assistant. This training generally takes place annually at the start of the academic year as part of the DPhil induction week.

While you are allowed to take up teaching opportunities outside of the department (including for any college teaching), these will not count towards the teaching hours requirement outlined above.

Supervision, mentoring and support

The supervisory relationship is one of the most crucial ingredients underpinning successful research. The relationship is two-sided, with obligations on supervisors as well as the student. Like any relationship, it has to be worked at and nurtured. It is therefore important to establish clear and explicit mutual expectations in order to minimise the risks and possible difficulties of personality clashes. You should ensure you meet with your supervisor regularly and be proactive in arranging meetings. It is suggested that the programme of meetings is drawn up well in advance and that supervisors and students avoid rescheduling.

The Oxford Teaching and supervision website (https://www.ox.ac.uk/research/support-researchers/teaching-and-supervision) is useful to DPhil students although it is also aimed at research supervisors.

As part of your welcome and induction into the department we have allocated a fellow Oxford CDT student as your 'buddy'. These buddies are students entering the second year on the programme. We hope that you will meet with your 'buddy' a few times as you start on the CDT. You should have received the email of your buddy from the Administrator.

All colleges have a comprehensive pastoral support system for Oxford Graduate Students, with a dedicated member of staff responsible for Graduate matters. Each Oxford student will have a College Advisor who will provide access to tailored pastoral, financial, welfare and academic related support independent of the CDT.

If in doubt, the CDT administrator can help with identifying routes for finding help and guidance.

Progression and progress monitoring

The notes below are designed to complement those in the departmental handbook, which you should consult for full regulations and advice. The Departmental Policies and University Regulations for students studying at Oxford can be found at the links below:

Mathematics Institute

- https://www.maths.ox.ac.uk/members/students/departmental-and-university-regulations
- https://www.maths.ox.ac.uk/members/students/postgraduate-courses/doctor-philosophy/handbooks

Transfer of Status

By the end of Michaelmas Term in Year 2: students' progress on their research project is assessed through a transfer of status process. Transfer of status for **all Oxford students** in the CDT is managed by the Graduate Studies team in the Mathematical Institute graduate.studies@maths.ox.ac.uk

To progress you will be expected to:

- **pass the assessments** on the core courses and electives. You may be examined on these courses at your Transfer exam if you have not passed.
- complete the required transferable skills training hours
- complete the **research integrity** course,

- **teach** at least two courses as detailed above.
- Students are also required to take part in the cohort activities and any absences from these must be explained.
- In order to transfer, you must also write a **short dissertation** which is specifically for the purpose of supporting that transfer application. Don't underestimate the amount of time it will take to write your dissertation and polish it to the required standard.
- You will be examined by two assessors, neither of whom will be your supervisor.

The purpose of the transfer process is to ensure that you have a convincing research programme, that you are making satisfactory progress in its development, and to satisfy the assessors that the work is potentially of DPhil quality.

A very useful checklist for transfer of status and a project initiation plan can be found at:

https://www.mpls.ox.ac.uk/graduate-school/information-for-postgraduate-research-students/progression

If your first application for transfer to DPhil status is not approved, you are permitted to make one further application and, if necessary, you will be granted an extension of time for one term for the purposes of making the application. Assessors may recommend that you should transfer to a lower level of research degree course as appropriate. If you wish to contest the outcome of the transfer assessment, either on procedural or academic grounds, you should first discuss the matter with your Director of Graduate Studies.

Confirmation of status

By the end of Michaelmas Term in Year 4: students will need to have their DPhil status "confirmed". The purpose of confirmation is to enable you to receive an assessment of your work and to provide an important indication that, if work continues to develop satisfactorily, it would be reasonable for you to submit your thesis within three terms. The confirmation involves an interview with two assessors who are not part of your supervisory team. You must have taught at least two sets of classes before transfer of status and at least three further sets of classes before confirmation of status.

The purpose of confirmation is to confirm that you are continuing to work at the appropriate doctoral level and to provide assurance that if the work on the thesis continues to develop satisfactorily, then consideration of submission within the course of three further terms would appear to be reasonable.

Submission of Thesis

We expect all students to have submitted their DPhil thesis by the end of their 4th year.

When you and your supervisor are agreed that your thesis is within one term (and the vacation which follows) of completion you should arrange for the completion of GSO.3 form to appoint final examiners http://www.ox.ac.uk/students/academic/guidance/graduate/progression/. The form has sections which should be completed by your supervisor, and by your College (which may all take time). When the form has been handed in to the Graduate Studies Administrator, it must be approved by the Director of Graduate Studies and two examiners will be formally appointed on the recommendation of the supervisor. Two copies of the thesis should be submitted no more than a term (and the vacation which follows) after this has happened.

A research thesis is normally examined by two examiners, a member of the Department and an external examiner who is an expert in the particular topic. The external examiner is usually a senior member of

staff from another university. After reading the thesis the examiners will hold an oral examination where you will be asked questions about your work and about your wider knowledge of the subject.

Minor revisions to a DPhil thesis may be required. Alternatively, you may be required to resubmit the thesis with or without a further oral examination. Exceptionally, the degree of MPhil may be awarded instead of the DPhil, or the examiners can decide not to award a degree.

Termly Reporting Requirements

Graduate Supervision Reporting (GSR) is an online system which allows students and their supervisors to report on the student's progress in their research project, and to reflect on your development as an independent researcher. You and your supervisors will be required to write formal reports on your academic progress at the end of each academic term, and during the Long Vacation.

It is **mandatory for all research students within MPLS to submit a reflective report on their progress each term via GSR**. You will be sent an e-mail each term inviting you to log into GSR (via student self-service) to submit a self-assessment report. You will be prompted to list completed training, identify any other training needs and provide a comprehensive overview of your progress. You can also set a flag in your entry if you have any concerns with your academic progress. This will be highlighted to your Supervisor(s), Director of Graduate Studies, and College Adviser. Once your report is submitted, your supervisor(s) will complete a report on your progress, which will be available for you to view.

GSR is open for students from Monday of week 7 to noon on Friday of week 9 of each term. **If you do not submit a report either for two subsequent terms, or for two terms out of three (on a rolling basis) this will trigger you being invited to a meeting with the CDT Directors to discuss your progress.**

Travel and Expenses

Conference and Travel Expenses

CDT students have access to a personal travel allowance of £2,000, to be used over the course of the CDT up until submission of their thesis.

Using this funding to support attendance at events and conferences, whether in the UK or overseas, should be discussed with your supervisor. Approval for travel funding must be then sought in advance of any purchase using the CDT travel application form, which can be supplied by the CDT administrator.

You do not need to apply for funding for travel related to CDT run activities or visits to CDT industry partners in the UK. In some cases, support for additional meetings may be possible.

We expect you make every effort to be as economical as possible. In particular, you should approach your college for funding for each conference where you will make a presentation, and apply for any funding available through the conference itself.

Purchases through Key Travel and Expenses Claims

Advanced train fares, flights, and accommodation can be bought via the University's Online travel agency Key Travel and charged directly to the CDT. If you do need to claim back travel costs you will need

original valid receipts and relevant paperwork. If you are claiming funds for meals, please keep the part which details what was eaten rather than just the final amount. Please contact the CDT administrator for assistance.

Expenses claims are made via the SAP Concur eExpenses system. Please contact the administrator for the correct code to use for your claim. There is some guidance from the university on allowances for travel. You are expected to use the best value for money method of travel. Guidance is also given on the appropriate level of spending on accommodation and food while travelling.

Travel Insurance

The University's travel insurance should always be used when making trips within the UK or abroad. Medical cover is not available for trips within the UK but all other sections of the insurance are provided. If the University's travel insurance is not used, any personal insurance will only be reimbursed if the insurance was for a single trip and there was a good reason not to use the University's insurance.

Working at the Mathematical Institute

Holidays

You should agree any days off in the working week (Monday-Friday) with your supervisor, to avoid any conflicts. Your leave must work around the compulsory elements of the CDT course and should generally be planned outside of term-time.

As a minimum you should take 20 workdays leave in addition to bank holidays (8 days) and periods of fixed closure for the Department (at Christmas and Easter, 6 days in total). Where Bank Holidays are worked time can be taken in lieu.

Guidance on working hours and paid work

CDT students should **regard their studies as a full-time occupation** of at least 40 hours per week, and should make themselves available for academic commitments during core working hours (9 am to 5 pm on weekdays). Only time spent engaged in focussed, conscientious work should be counted towards working hours.

The maximum number of hours that a DPhil student should be working is an average of 48 hours over 17 weeks. It is recognised that sometimes long working hours are needed for a period to manage the demands of the research, but no student should be regularly working above this number of hours unless they have explicitly and freely chosen to do so.

CDT students are advised that any paid work should still allow them to spend at least 40 hours per week for a minimum 44 weeks of the year on their studies. CDT students should discuss any plans to take on external work with their supervisor.

See the link below for University guidelines on paid work by doctoral students:

https://www.ox.ac.uk/about/how-we-are-run/policies-and-statements/policy-hub/paid-work-graduate-students

Absence/Illness

If you need to take time off due to illness or unforeseen circumstances, please contact the CDT Administrator as soon as possible by phone or email. It is important for us to know your whereabouts as we have a duty of care. Recording all periods away from the department is important for students studying under a student visa as we have a legal responsibility to UK Visas and Immigration to know where you are.

Residence Requirements

The University stipulates residency requirements for students. This page also outlines how to seek approval to not meet the residency requirements in certain circumstances, for example, a period of study elsewhere or your supervisor moving to another institution. Applications for dispensation or excusal should be discussed with the Director of Graduate Studies and graduate administration team in the first instance.

Internships

Some students choose to undertake an internship whilst studying with us. It is crucial you discuss the possibility of this with your supervisor to assess how an internship will impact on your research and your submission timeline. The process for doing an internship is described on the MPLS website and requires both the student and the supervisor to complete an application form, which the requires approval by the DGS

Provided you are not studying on a visa and/or you're not undertaking a UKRI internship, whether you decide to suspend during the period of your internship is up to you. The timing and length of the internship may influence this decision. Requests for retrospective suspension to cover internship periods are very unlikely to be approved.

Upon suspension, your milestone deadlines (Transfer / Confirmation of Status) and the maximum submission deadline for your final thesis all extend to take account the period you are out on suspension. As you are not expected to be actively working on your research during this time, you can devote yourself fully to the experience of your internship. For this reason, as a general rule, if a student's internship does not directly relate to the topic of their research, we advise them to suspend their status. If you decide not to suspend, your milestone deadlines and maximum submission deadline do not move to accommodate the time you are undertaking your internship. There is the risk that, once the internship ends, you will have too little time to complete your research before your maximum submission deadline, and may have to apply for an extension of time (see 8.2.3), becoming liaible for college and possibly University continuation charges.

Also upon suspension, stipend payments cease. Please bear this in mind, especially if you are undertaking an internship during the summer period. Suspension of status must be in place for a complete term, so choosing to suspend for a summer internship would necessitate suspension for the whole of Trinity term and the long vacation I.E, April to early October. As all stipend payments cease during suspensions, this would mean a student would miss the two stipend payments of Trinity term (April and July).

Shorter internships could be undertaken within a student's annual leave allowance (30 working days per annum). However, you should ensure you retain some annual leave time to enable you to rest properly.

Please note: If you are undertaking a paid UKRI internship, you cannot suspend. You will receive additional stipend to cover your UKRI internship period, and your usual stipend payments will resume when you return from your UKRI internship. You may still need to defer your milestones and apply for an extension of time if necessary, however.

If you are here on a visa, please contact the Student Immigration team (student.immigration@admin.ox.ac.uk) for advice about undertaking an internship.

Resources available to CDT Students

In the first year you will all be based in the CDT rooms in the Mathematical Institute. There will desktop computers in the room; should their number prove insufficient then we will address this issue. These machines will provide access to mathematical software. In later years, you will be physically located within the research group of your primary supervisor.

All CDT students have access to:

- Electronic & paper journals (NB you need to use an Oxford VPN or laptop departmental machine to access the electronic ones)
- Department bench collections (small collections of relevant books)
- Libraries
- Bookable teaching space
- Black & white and colour printers throughout the building.
- Social spaces including the common room and the café

We encourage you to make use of all of these resources.

CDT GPU Access

For those of you requiring additional machines there is information on what is available in the department here: https://www.maths.ox.ac.uk/members/it/machines

The CDT has access to GPUs for your use in computational projects. Our machine has 3 x Nvidia 2080Ti GPUs with 384GB of RAM, 32 CPU cores and 4.5TB of local storage space for data.

There are a couple of ways to connect to **elixir.maths.ox.ac.uk** (the CDT compute server). The machine is accessible via SSH by connecting first to gate.maths.ox.ac.uk (you can skip this step if you're in the institute), and then making an SSH connection again to elixir.maths.ox.ac.uk (logging in using your maths username and password). This will give you command line access, so it's only suitable for operations that don't require graphics. If one needs access via a graphical user interface though, then this can be achieved by using X2Go as described in the following address:

https://www.maths.ox.ac.uk/members/it/faqs/connection/remote-access-linux-systems

using **elixir.maths.ox.ac.uk** as the host address.

Student Support

MPLS Division Postgraduate Research information (here you will find lots of useful information relating to the processes for DPhil students in Oxford):

https://www.mpls.ox.ac.uk/graduate-school/information-for-postgraduate-research-students

Welfare

Students are always welcome at any time to discuss their concerns with the CDT Director, Deputy Director, CDT Administrator, Academic Administrator and any other member of the department they feel comfortable with.

Support is also available via College Advisors and College Offices. Every graduate student at Oxford has a College Adviser, who is an academic member of his or her College, usually a Fellow. The role of the College Adviser is additional and complementary to that provided in the student's department or faculty. The College Adviser is not expected to perform the role of the Department Supervisor, or to be responsible for directing students' academic work. Rather, the intention is to provide a focal point for an individual student's relationship with the College, and general academic or pastoral advice and assistance throughout the student's course of study.

Other sources of advice and help include:

Student Counselling Service	http://www.ox.ac.uk/students/welfare/counselling/
To request an appointment, contact the Counselling Service in person, by phone or email. Please note that you are eligible to refer yourself to, and use, the Counselling Service during a period of suspension. If you are already engaged with the Counselling Service at a time when you suspend you can continue with your counselling until an appropriately agreed ending. The service run a wide range of workshops and have a range of podcasts which may be helpful in managing your wellbeing.	
Oxford University Student Union	https://www.oxfordsu.org/advice-wellbeing/
Independent advice and information service exclusively available to Oxford University students.	
Peer Support	https://www.ox.ac.uk/students/welfare/peersupport
Students trained to provide support to other students. There are Peer supporters based in colleges and Peers of Colour, Rainbow Peers, and Disability Diversity Peers available.	
Nightline	https://oxfordnightline.org/
An independent listening, support and information service run for and by students of Oxford and Oxford Brookes universities. Available 8pm-8am Monday to Sunday, 0th week to 9th week during Oxford University term time.	
Current information for students – health and welfare	http://www.ox.ac.uk/students/shw/

Mental Health First Aid

If you feel distressed or in need of support and guidance about how to look after your own mental health, or if you have concerns about someone else's mental wellbeing, please contact one of the Mathematical Institute's Mental Health First Aiders. They have received training to understand mental health and the factors that can affect wellbeing. They will listen to you non-judgementally and confidentially, and will guide you to further support.

Access to External Support and Resources

If you'd prefer to access support outside the university, the Mathematical Institute has partnered with Validium to provide an extensive Employee Assistance Programme (EAP), accessible to all Mathematical Institute staff and post-graduate research students.

Employee Assistance Programme (EAP)

Support for personal and work issues

Your organisation gives you free access to an Employee Assistance Programme for information and counselling services. The EAP, which is provided by The Validium Group, is available 24 hours a day, 365 days a year.

Counselling Support

Counselling is a safe place for employees to explore personal or work-related concerns with professional support. This may take the form of counselling over the telephone, referral to face to face counselling, eCounselling, online resources or signposting to other agencies, as appropriate.

Legal

A specialist team of lawyers is available to provide employees with help and guidance on many different areas of personal law, including consumer, property, landlord/tenant, family and motoring law.

Money & Debt Specialists

A dedicated team is available for employees to access information on money matters, which may be affecting their welfare, including managing creditors, budgeting and debt management plans.

Health & Wellbeing

The occupational health nurses provide employees with information and guidance on lifestyle issues such as diet, exercise and sleep, as well as answering questions about health and medical matters, child care and eldercare issues.

Manager Support

Managers can contact a specialist manager support team for confidential support when assisting employees with their problems, tackling difficult management issues, responding to the early warning signs of stress and referring colleagues to the EAP.

vClub Online

The vClub online EAP gives employees access to hundreds of downloadable help sheets, links to specialist resources and access to e-counselling.

0800 3 58 48 58

Outside UK: +44 141 271 7179

For online support join vClub at **validium.com**

Username: math

Password: eap4support

NGT Service: 18001 + helpline number or download NGT Lite App. Ensure your device is connected to Wi-Fi to run NGT Lite.

validium
IMPROVING MENTAL HEALTH

My vClub – Available on App Store & Google Play

Harassment

The Mathematical Institute is committed to creating a happy and healthy working environment, where everyone is treated with respect and dignity. We do not tolerate any form of harassment or bullying. The department subscribes to the University's approach to preventing and responding to harassment and sexual misconduct involving students. You can also view the University's Harassment Policy.

The department also has several Harassment Advisors who can offer confidential support and advice, and are a good first contact for help.

Equality, diversity and inclusion

The department subscribes to the University Equality Policy. The Mathematical Institute also has its own Good Practice Statement. The statement asserts the department's commitment to creating an outstanding working environment, in which all are treated equally in their prospects, recognition and progression, with particular emphasis on those from under-represented, minority or disadvantaged groups. This commitment is overseen by the Equality, Diversity & Inclusion Committee.

The department's initiatives to provide a supportive environment for all include Mathematrix, a student-led discussion group where postgraduates, postdocs and staff explore topics related to the challenges in being a minority in the mathematics community.

The department's Athena Swan Silver Award was renewed in 2021 and reflects the work put in to increase gender diversity in a subject that, while predominantly still male, is becoming more balanced.

The Mathematical Institute is committed to making its teaching and other resources, facilities and services available to students with disabilities to ensure that they are not at a disadvantage. Read the department's full statement on disability. If you think you might require support during your studies, or alternative arrangements for examinations, you should consult the Disability Coordinator and/or the University Disability Advisory Service.

University Language Centre

International students, whose first language is not English, are strongly advised to visit the University Language Centre to find out more about the courses on topics such as Academic Writing and Advanced Communication Skills which run during term time. These have a registration fee for graduate students. Details are available at http://www.lang.ox.ac.uk/courses/english.html

Childcare Services

Information on the University's childcare services can be found at http:///www.admin.ox.ac.uk/childcare/

The Careers Service

The University Careers Service can be found at 56 Banbury Road with a website at http://www.careers.ox.ac.uk/**.** It is a free service for all Oxford University students including postgraduates, and also for alumni. It provides one to one guidance, support and advice; information

on occupations, vacancies and further study; feedback on CVs and application forms; and skills coaching for preparing for interviews and making applications.

The Careers Service also runs the University Internship Programme http://www.careers.ox.ac.uk/internship-office-and-work-experience/the-internship-programme/.

University policies

Proof-reading

It is the responsibility of the students to ensure that their thesis has been adequately proof-read before it is submitted. The student's supervisor may alert them if they feel further proof-reading is needed, but it is not their job to do the proof-reading. The student should proof-read their own work, as this is an essential skill in the academic writing process. However, for longer pieces of work it is considered acceptable for students to seek the help of a third party for proof-reading. Such third parties can be professional proof-readers, fellow students, friends or family members (students should bear in mind the terms of any agreements with an outside body or sponsor governing supply of confidential material or the disclosure of research results described in the thesis). Proof-reading assistance may also be provided as a reasonable adjustment for disability. The student's thesis may be rejected by the examiners if it has not been adequately proof-read.

Plagiarism

Plagiarism is the copying or paraphrasing of other people's work or ideas into your own work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Collusion is another form of plagiarism involving the unauthorised collaboration of students (or others) in a piece of work.

Cases of suspected plagiarism in assessed work are investigated under the disciplinary regulations concerning conduct in examinations. **Intentional or reckless plagiarism may incur severe penalties, including failure of your degree or expulsion from the university.**

For more information on what constitutes plagiarism and to find an online course for a useful overview of the issues surrounding plagiarism and practical ways to avoid it visit:

https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism

Research integrity

Research integrity is a commitment to creating an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness and lawfulness. The University expects its students to maintain the highest standards of integrity in their research.

For individual researchers, research integrity entails a commitment to a range of practices including:

- intellectual honesty in proposing, performing, and reporting research;
- accuracy in representing contributions to research proposals and reports;
- transparency in handling conflicts of interest or potential conflicts of interest;
- protection of human participants in the conduct of research;

- humane care of animals in the conduct of research.

There are no universally correct ways to do research. There are, however, standards of practice which apply generally. Researchers should:

- be aware of the legislation, codes of practice and University policies relevant to their field;
- have the necessary skills and training for their field;
- comply with University and funder policies relating to research data management;
- be aware of the publication rules for the journals they want to publish in;
- ask if they feel something isn't quite right;
- not ignore problems;
- be accountable to the University and their peers for the conduct of their research.

All researchers are expected to be committed to ethical principles and professional standards. Not upholding such standards, either intentionally or through lack of knowledge, damages the scientific process and may harm research participants, colleagues, the University and society as a whole.

All those involved with research at Oxford are expected to read and abide by the University's Research Integrity Policy

Students in the Mathematical Institute are required to complete the online Research Integrity course by the time they apply for Transfer of Status.

The course can be found online - Research Integrity course. This site also contains a number of additional resources, including links to information on authorship, conflicts of interest, research data management, health and safety, human participations in research, intellectual property, research involving animals, and research misconduct.

Your supervisor will play an important role in helping you to develop skills for good practice in research, and is the first person you should ask if you have queries about any aspect of research integrity. Other sources of support and advice include your Director of Graduate Studies, other academics in your department, and the ethics advisors in University Research Services.

Use of Generative AI

The University has a policy for using Generative AI in Research and useful information on provision of Generative AI Tools to Support Learning. The MPLS Division has policy on Generative AI use and the department has created some mathematics-specific examples for declaration of AI use.

We strongly recommend you familiarise yourself with the guidance on these pages, as you must adhere to the policies and declare any use of AI. You are required to provide a declaration of AI use as part of your Transfer of Status and Confirmation of Status work, and with your final thesis. You can be expected to be asked about your use of AI in the oral part of Transfer, Confirmation and the final viva.

Publishing

Acknowledgements in publications

Please include the following acknowledgement in all papers:

"This publication is based on work supported [or partially supported] by the Oxford Centre for Doctoral Training in Mathematics of Random Systems: Analysis, Modelling and Simulation“

Act on Acceptance / ORA

The Oxford University Research Archive (ORA) is a permanent and secure archive of the University which preserves an array of research publications, journal articles, conference papers, working papers, theses, reports, book sections and more. Unpublished academic work is also deposited into ORA, maximising the University's research output. All papers and your final thesis must be submitted to ORA.

More specifically, in order to be eligible for the next REF, the final peer-reviewed version of journal articles and conference papers (with an ISSN) must be deposited in an open access repository within three months of acceptance for publication. When you've had a paper accepted for publication, please Act on Acceptance – deposit the accepted manuscript (the final peer-reviewed version) into the ORA within 3 months of acceptance. Guidance on how to submit your thesis in ORA can be found here.

Research Data management

In order to ensure that it is easy for researchers to compare their work quantitatively to others, to check whether the results printed in papers can indeed by obtained by the stated mathematical method, and to see whether the results of new research are better, EPSRC require authors of journal articles and conference papers to make their "underlying data" openly available, after a potential embargo period.

For typical mathematics papers, this means the following: for each plot, unless it is a very simple function specified in the paper, the authors must provide either a file with the relevant tabulated data, or the software which generated the data and plot. The collected data forms a dataset which must be openly available and archived for at least 10 years using a permanent DOI label, and this DOI must be provided in the paper, typically in the Acknowledgements section after acknowledging funding. There is no particular format required, but a csv text file is recommended.

In practice, this means that students should upload the data associated with the plots in their papers onto the Oxford University Research Archive (ORA) alongside submitting their paper.

Further information, including on how to upload data into ORA, can be found at https://www.maths.ox.ac.uk/members/research-support/open-access

Complaints and Appeals

Student complaints regarding any aspect of the CDT will be handled through the complaints system at the University of Oxford. More information can be found on the central University complaints site

- https://www.ox.ac.uk/students/academic/complaints?wssl=1