

Biannual meeting of the Directors of Studies in Mathematics
DRAFT (UNAPPROVED) MINUTES

Date and time: Tuesday 13 November 2018, 14:00

Venue: Room MR5, Centre for Mathematical Sciences

Chair: Colm-cille Caulfield (DoS Convenor, Churchill)

Present: Ronojoy Adhikari (King's), Wayne Boucher (Sidney Sussex), Maurice Chiodo (King's), Stephen Cowley (Emmanuel), Jonathan Evans (Gonville & Caius), Anita Faul (Selwyn), Thomas Forster (Queens', Clare Hall), Julia Gog (Queens', Subject Convenor), Anders Hansen (Peterhouse), Johannes Hofmann (Peterhouse), Robert Hunt (Christ's), Ana Khukhro (Murray Edwards), Ross Lawther (Girton), John Lister (Trinity), Stuart Martin (Magdalene), Adriana Pesci (King's), Orsola Rath Spivack (Lucy Cavendish, Faculty Admissions Officer), Paul Russell (Churchill), John Sherwood (Newnham), John Taylor (St. John's), Andrew Thomason (Clare, Chair of the Faculty Board), Christopher Tout (Churchill), Maria Ubiali (Newnham), Clive Wells (Hughes Hall)

Apologies: Sebastian Andres (Jesus), Stergios Antonakoudis (Emmanuel), Anthony Ashton (Homerton), Natalia Berloff (Jesus), Chris Brookes (Corpus Christi), Jack Button (Selwyn), Rachel Camina (Fitzwilliam), Nilanjana Datta (Pembroke), Sophia Demoulini (Downing, Wolfson), Matthias Dörrzapf (St John's), James Dougal (St Catherine's), Tom Fisher (Trinity), Berry Groisman (Sidney Sussex), Vytautas Gruslys (Christ's), Julian Holstein (St John's), Adrian Kent (Darwin), Anastasia Kisil (Corpus Christi), Eric Lauga (Trinity), Imre Leader (Trinity), Jason Miller (Trinity), Nikos Nikiforakis (Selwyn), Peter O'Donnell (St Edmund's), Nigel Peake (Emmanuel), Malcolm Perry (Trinity), Ron Reid-Edwards (Trinity), Matt Saxton (Queens'), Carola Schönlieb (Jesus), Stephen Siklos (Jesus), David Skinner (Trinity), Gareth Taylor (Corpus Christi, Jesus), Mike Tehranchi (Trinity), David Tong (Trinity), Simon Wadsley (Homerton), Chris Warner (Robinson), Henry Wilton (Trinity), Matthew Wingate (Fitzwilliam), András Zsák (Peterhouse)

1. Apologies

The Chair welcomed everyone to the meeting and read out the apologies received.

2. Declarations of interest

There were no declarations of interest.

3. Minutes of the previous meeting on 18 May 2018

The minutes of the previous meeting were approved.

4. Matters arising from previous meeting

a) Style of DoS Meeting minutes

The Chair reported that the minutes of the last meeting were very long and there was considerable delay in producing the draft. The Departmental Administrator for DAMTP had advised that it will not be possible for the admin team to provide this level of support.

The Committee agreed that the level of detail in the minutes should be reduced, and that polls should be taken and recorded in discussions where there is not a clear consensus.

b) Admissions matters – STEP

In the absence of Dr Siklos, the Chair reported that the Bursars' Committee had confirmed that funding for the STEP Support Programme would continue for the current 2018/19 year. Dr Rath Spivack noted that the STEP Support Programme appeared as a time-limited expense from the Cambridge Admissions Office, and that the Bursars are aiming to reduce the number of these expenses that are funded by the Colleges.

The Committee agreed that the Chair should write to the Head of the Cambridge Admissions Office and the joint Chairs of the Undergraduate Admissions Committee to emphasise the importance of the STEP Support Programme. This should include relevant recommendations and extracts from the Faculty's recent Learning and Teaching Review and note that the Faculty are in the process of gathering evidence of the effectiveness of the Programme.

Action: Chair

c) Resource Audit

The Chair reported that a prototype web-based 'marketplace' for matching supervisors with Directors of Studies had been developed, and it is hoped that this will be live for Lent Term. Support for this would be provided by the Faculty.

5. Admissions matters

a) Maths Subject Convenor report

Professor Gog recorded her thanks to Dr Chris Warner for acting as Subject Convenor for 2017/18, and the Chair thanked Professor Gog for returning to the role.

Professor Gog discussed the main points covered by the report:

- i) Moodle should be the main method used for sharing documents,
- ii) interviewers must have attended a training session, and the last maths-specific session was to take place on 22 November,
- iii) the DoS should be more willing than usual to share efforts and offer interview time to other Colleges due to the loss of UMS,
- iv) the DoS should be very careful handling applicant data, and more guidelines would be provided early in the new year,
- v) there was no evidence that the flexible offer made an effect on the number of applications,
- vi) some Colleges regularly had large differences between the number of students admitted and the target published in the Guide to Admissions. Dr Rath Spivack clarified that the number published in the Guide is a target, and not a maximum.

The Committee agreed to use the same Winter and Summer pool procedures as for 2017-18.

Professor Lister asked if there were figures showing the number of deselected students, particularly split by Home and Overseas students. Professor Gog reported that she didn't have these, and would need to find them from a route that excluded students who were rejected at interview.

There were concerns that the figures in the report were not representative of the true numbers of students, as they included students admitted for deferred entry, visiting or affiliated students, or those who change to Natural Sciences between application and admission. Dr Rath Spivack will produce a set of figures with numbers split between those admitted and those who actually started the Tripos.

Action: Faculty Admissions Officer

b) STEP Co-ordinator's report

The Board received the report and noted that it would also be presented to the Faculty Board.

c) MUAC

Dr Cowley reported that some analysis had been carried out of attainment and progression on the issue of the STEP 2/3 borderline, but that this analysis was not yet complete. This will be circulated at a later date.

Dr Hunt said that in his experience the information on the Maths webpage about applicants taking Maths A Level in Year 12 is not clear. In particular, applicants taking Maths in Year 12 and 3 A Levels in Year 13 are unsure about whether their offer includes their Year 12 Maths grade. Dr Rath Spivack

noted that not all Colleges treat this situation in the same way. The Committee discussed this whether Colleges should ask such applicants for two A*s in Year 13. The Committee agreed in principle that Colleges should not ask for two A*s in Year 13, but noted that not all Colleges are represented at this meeting. Professor Caulfield will write an email to the DoS to summarise the conversation and ask if anybody objects to the proposal.

Action: Chair

If there are no objections, the Committee will make a recommendation to MUAC. Dr Rath Spivack will also approach CAO to ask for the advice in the prospectus to be changed to reflect this.

d) Faculty Admissions Officer

The Board received the FAO's report (**DOS18/05**), which had been circulated in advance. Dr Rath Spivack noted that some of the numbers were different to the Subject Convenor's report, and explained that she had excluded visiting and affiliated students.

Dr Rath Spivack raised her concern about the trend in admissions numbers, and particularly about the low number of female students. She reported that MUAC and the Colleges together were taking action on this, and details of this may be circulated to the Committee later.

Dr Rath Spivack noted that the report did not fully cover open days, and that a full report on this would be produced for information. She advised that feedback on the open days was generally good and proposed two changes to the Faculty open days.

- i) The Admissions Forum were concerned about the low take-up of College events for maths open days, possibly due to the double ticketing system. Dr Rath Spivack has suggested that students be able to book College and Faculty events with a joint ticket, a process that is administered by the Faculty. She noted that Colleges would need to agree this with the Faculty, and inform the Faculty about any bounds on the number of student visitors they can accommodate. Dr Rath Spivack asked the DoS to confirm whether their Colleges would like to use this system by the end of November. Dr Rath Spivack will also send an email to the DoS to ask the same question.

Action: Faculty Admissions Officer

- ii) When students visit the Faculty, they are given the Guide to Admissions, together with a pack of other admissions information. Many students receive the same information from the Colleges. Dr Rath Spivack proposed that the Faculty distribute the guide to admissions and reading list at open days, and other documents be distributed by the Colleges. She noted that many Colleges would value having the admissions booklet at other outreach events, and asked that they let the Faculty know in advance for printing. The Committee agreed to these proposals.

Action: Faculty Admissions Officer

Dr Cowley reported that in 2017, 34% of undergraduate mathematics students admitted to Oxford University were female (122 males and 63 females), whilst only 15-17% of maths undergraduates admitted to Cambridge were female. Professor Gog noted that Oxford had far more female applicants, and looking at the 2017 statistics, women applying to Cambridge for mathematics had a higher chance of admission to those applying to Oxford.

Dr Rath Spivack asked the DoS to volunteer to help with the July open days, as it is always very difficult to recruit volunteers.

6. Tripos matters

a) Teaching Committee report on Examinations

The Committee received the report and noted that it will be presented to the Faculty Board. Professor Lister drew the Committee's attention to three main points:

- i) An External Examiner had commented that some candidates had employed very poor exam strategy. Professor Lister reminded the DoS that they should advise their students on appropriate strategy.
- ii) An External Examiner suggested that the Faculty introduce routes for students to develop transferable skills such as working in teams, setting up and tackling more open problems and giving presentations. Professor Lister commented that this is resource intensive and that it is unclear how to appropriately award credit for such assignments, but noted that some Colleges provide these opportunities at a College level.
- iii) The Examiners suggest that the Faculty reduce the number of short questions for 24 lecture courses in Part IB from 3 to 2, so that every course has 2 short questions regardless of length. Professor Lister believed that this would help to balance the difficulty between questions, and wouldn't disadvantage weaker students.

Dr Hunt commented in relation to ii) that it had previously been suggested to include presentations as a part of CATAM, but that the idea had not been adopted. He also mentioned that he had previously been involved when MIT established their own computational projects, and that these included group work in all stages and it worked very well. The Institute felt that they should do what is educationally best for the students, and work out how to examine it afterwards. Dr Hunt said that CATAM would be a very good vehicle for this style of working if it was not done at a College level.

Dr Cowley added that he had trialled group and presentation work in his College as a part of CATAM. Students were given a short MATLAB project to complete in the first two weeks and present to each other, which seemed to be well received, and did not receive any opposition from CPAC. Dr Cowley commented that if the DoS believe some form of group work to be important, and the Faculty also believes it to be important, then the Faculty should provide the funds to ensure that students have this opportunity regardless of College. He reminded the DoS that it is important that the Office for Students sees that the University is providing equal opportunities for students. Professor Lister commented that the Teaching Committee had previously been unenthusiastic about organising group or presentation work at a formal level, and that a lot of the educational value provided at other institutions is covered by supervisions. He added that it would be unreasonable to give students more to do, and that it is undesirable to remove any aspects of the course to include this.

Dr Rath Spivack commented on the recommendation in section 3.1 of the report to advise Part IA students to 'expect the unexpected'. She said that the phrasing was unhelpful, and might cause more worry to anxious students.

Dr Rath Spivack also commented that a breakdown of results by gender was included with the examiners reports, and this year female students performed worse than males in all three years. Professor Lister explained that following consultation with female colleagues, the Teaching Committee felt it wasn't useful to put explicit comments on the report, which is displayed on the website. This issue is being discussed by various committees.

b) Provision of "lecture classes" for Numbers & Sets and Dynamics & Relativity for physicists

Dr Evans explained the arrangement of providing lecture classes on Numbers & Sets for Maths with Physics students, and asked for feedback and whether these arrangements should continue to be offered for Dynamics & Relativity in Lent Term. Several DoS commented that they had students who had switched from Maths with Physics to Maths. The general sentiment was that the classes are useful for students to absorb the concepts, but it would be difficult for students to be supervised in the course or to sit the exam.

The Committee voted on whether they would encourage their Maths with Physics students to attend similar classes on Dynamics and Relativity, even if they wouldn't attend supervisions. The Committee came to a strong consensus in favour of continuing the provision this year.

c) Feedback on supervisors from questionnaires

Professor Lister reported that some students comment on their supervisors in the end of term and end of year questionnaires. He noted that the Teaching Committee will send anything in the end of year questionnaires to the supervisor(s) concerned, but will only act on the end of term questionnaires if a supervisor receives a large amount of negative feedback. Professor Lister reminded the Committee that Colleges should seek feedback from their students about their supervisors.

d) Model answers and marking schemes

This issue had been raised for two reasons:

1. Some Colleges' students are provided full sets of model answers, and some aren't.
2. The night before this year's exams a student shared on Facebook a document containing solutions to 18 years of Probability questions. These were not the Faculty's model solutions, but had been produced separately.

The Faculty's position is that revision supervisions should cover the most recent 3-4 years' questions, though supervisors can help eager students who have attempted older questions and got stuck. Students must not be given sets of model answers. Professor Lister reminded the Committee of this, and noted that setting a large backlog of exam questions is not educationally useful and can produce differences between the Colleges.

Dr Cowley noted that under Freedom of Information, if someone asks for model solutions then the Faculty has to provide them. It is possible therefore that some groups have access to a large number of model answers, but others do not. Professor Lister accepted that the Faculty cannot stop solutions being obtained in this way, but that it must not give a message to students that the best way to success is to grind through a large number of questions. He asked that the DoS remind supervisors, particularly those with access to a large number of model solutions, of the Faculty's policy on sharing solutions as described above.

7. Membership of other committees

a) Part III Permissions Committee

There were no volunteers to serve on the Part III Permissions Committee. The Chair will investigate further.

Action: Chair

b) Mathematics Undergraduate Admissions Committee (MUAC)

There were no volunteers to serve on the MUAC. The Chair will investigate further.

Action: Chair

8. Any other business

The Chair reminded the Committee that a list of DoS sorted by circus for Part II supervisions is available on the Faculty website.

Dr Cowley reported that he may need more interviewers, and asked the DoS to be willing to help.

Professor Lister reported that the University is in favour of the overall degree classification scheme, where the final classification will be 70% Part II and 30% Part IB. The Faculty is likely to ask for an exemption, so that only the Part II class is used for the overall classification. Dr Evans noted that the University will need to hold a vote to pass this scheme, and urged the DoS to vote against the scheme as it stands.

9. Date of next meeting

The Committee agreed to meet, subject to final confirmation, at 2.00pm on Friday 17 May 2019 in MR5.

Note: the next meeting will be held at 11.00am on Friday 17 May 2019 in MR5.