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UNIVERSITY OF
CAMBRIDGE

NOTICES

Calendar

28 November, *Wednesday*. Scarlet day and Flag day.
 29 November, *Thursday*. End of third quarter of Michaelmas Term.
 30 November, *Friday*. Full Term ends.
 19 December, *Wednesday*. Michaelmas Term ends.

Discussion on Tuesday, 4 December 2012: Cancellation

26 November 2012

The Vice-Chancellor gives notice that the Discussion announced for Tuesday, 4 December 2012, will not take place as there are no Reports ready for discussion.

Report of the Council seeking authority to commence development of University land at North West Cambridge: Notice in response to Discussion remarks

26 November 2012

The Council has received the remarks made at the Discussion of this Report on 6 November 2012 (*Reporter*, 6285, 2012–13, p. 125). It notes the remarks made by Professor Sanders, Dr de Lacey, Mr Sargeant, and Mr Goode in support of commencing development of the land.

In response to the remarks made by Dr de Lacey, the Council recognizes that while the location of the boundary between the City and South Cambridgeshire will be of relevance to residents, the priority in planning this new neighbourhood has been to provide coherence for the development as a whole. The proposed estate charge will be levied equally on all residents on the estate in direct relationship to their occupied area. Any differences in the charges to which Dr de Lacey refers will therefore relate to differing levels of Council tax across different administrative areas, neither of which is under the control of the University. Links with local community representatives including local clergy have already been established through a stakeholder forum. It is anticipated that representatives of this forum will be consulted on the eventual management of the completed development, including the new open spaces within the scheme. Dr de Lacey was also concerned about the maintenance of public spaces. The scheme involves a much greater proportion of open space than is typically included in commercial developments, and there was concern about the level of capital contributions required by the local authorities before they would assume responsibility for those and also the standards of maintenance over the long term. The Council has agreed that the University should retain responsibility for most of the open space, although the central green space and Community Hall will be jointly managed with the City, which will make a contribution to the costs.

Mr Sargeant asked about the ‘social housing’ aspects of the scheme. The land has been released from the Green Belt to meet University development needs for key worker housing, student accommodation, and research buildings. As the Report makes clear, a primary driver for commencing the development now is the shortage of suitable residential accommodation for rent in Cambridge and the consequent inability of new research staff in particular to obtain suitable accommodation at an affordable price. The local authorities have accepted that in providing such accommodation, the University will have a sufficiently helpful impact on housing supply in Cambridge that the normal social housing requirement on developers would be inappropriate. The Council reminds the Regent House that it was consulted on the whole scheme in 2010¹ including the approach to housing and the allocation policy for the rented accommodation. In resolving to grant planning consent, the local authorities have satisfied themselves that the University’s proposals will create a mixed and balanced community.

Mr Maclaren asked about the form of tenure for the ‘market housing’. Expert legal and housing market advice has been taken regarding land to be sold for development and whilst disposal on a freehold basis is most likely, sale on a leasehold basis to a housing rental investor is not precluded; however there is no established demand in Cambridge to date. The Council is satisfied that an adequate assessment of the risks of the approach to disposal has been undertaken. The value of £50,000 per plot calculated by Mr Maclaren is erroneous. However, for reasons of commercial sensitivity, the Council does not want to release information in a format which would enable potential developers to calculate the University’s expectations in respect of land values or engage in detailed analysis on the point. The Council does however wish to reassure the Regent House that the anticipated income from land sales has been calculated with professional external advice and is reflective of values obtained from similar developments in the Cambridge and wider area. The total income shown in the graph in paragraph 23 of the Report accurately reflects the total income shown in the financial summary, although there are some differences of detail in the descriptions attached to income streams. ‘Other income’ for example is not shown separately in the graph. Paragraph 24 of the Report considers financial metrics, assumptions, and sensitivity analysis. The Finance Committee papers referred to at the end of that paragraph contain, as Mr Maclaren found, and as the Report indicated, further details on these points but not necessarily on the other matters which are of concern to him. Mr Maclaren has also misinterpreted the Council’s Notice of 24 October 2011 (*Reporter*, 6240, 2011–12, p. 82), which made it clear that the £13.25m to develop detailed proposals for Phase 1 was in addition to sums previously approved for the project.

¹ <http://www.admin.cam.ac.uk/reporter/2009-10/weekly/6194/>.

The Council shares the frustration of Professor Sir Peter Lachmann about the problems caused by repeated changes to plans for the improvement of the A14 corridor, but has to operate within the current planning guidance and national highways policy. In response to concerns raised by residents of the Conduit Head Road Conservation Area during the planning application consultation period, the University modified the height parameters to restrict building heights north of the conservation area to 10m (from 15m previously). This is shown in Zone T on the approved parameter plan. The existing hedgerow and track to the north of the Conduit Head Road Conservation Area will also be retained to provide further separation between the new development and existing residences. The width and length of the zone are considered appropriate to reduce the effects on adjoining residential properties.

The Council is submitting a Grace (Grace 1, p.173) to the Regent House for the approval of the recommendations in the Report.

NOTICE OF A BALLOT

In the Report published on 24 October (*Reporter*, 6282, 2012–13, p. 59), the Council indicated its intention to call a ballot on the proposed Grace seeking authority to proceed with the development of a first phase of development at North West Cambridge, as described in the Report.

In accordance with Regulation 7 of the regulations for Graces of the Regent House (*Statutes and Ordinances*, p. 107), the Council now gives notice that a vote will be taken on the Grace (p. 173) by postal ballot.

In connection with the ballot, the Registry will arrange for the printing and circulation of any fly-sheet, signed by ten or more members of the Regent House, which reaches him at the Old Schools by 1 p.m. on **Thursday, 6 December 2012**. Fly-sheets may also be faxed to 01223 332332 or scanned (showing signatures) and sent by email to registry@admin.cam.ac.uk. Fly-sheets must bear, in addition to the signatures, the names and initials (in block capitals) of the signatories (*Statutes and Ordinances*, p. 112). Voting papers and fly-sheets will be distributed to all members of the Regent House on or before **Wednesday, 9 January 2013**; the deadline for the return of voting papers will be 5 p.m. on **Thursday, 24 January 2013**.

Seventeenth Report of the Board of Scrutiny (2011–12): Notice

26 November 2012

This Notice is the Council's reply to the Board of Scrutiny's Seventeenth Report (*Reporter*, 6274, 2011–12, p. 815) and the Discussion of it held on 9 October 2012 (*Reporter*, 6281, 2012–13, p. 52).

The Council is grateful to the Board of Scrutiny for its constructive comments on the matters it has considered and wishes to respond as follows to the recommendations made in its Report.

- 1. The Board recommends that the Council makes as much information as possible available to the Regent House before asking for its approval for the North West Cambridge project.**

The Council agrees with the Board on the importance of publishing full information about the North West Cambridge project. Updates on the project's progress are provided regularly via a dedicated website (<http://www.nwcambridge.co.uk/>) and also in Council Notices and Reports published in the *Reporter*, including most recently the Report seeking authority to commence Phase 1 of development on the North West Cambridge site, on which a ballot will be taken in January (*Reporter*, 6282, 2012–13, p. 59). This most recent Report included financial information about the project and an invitation to any member of the Regent House to request further such information considered by the Finance Committee from the Director of Finance.

- 2. The Board recommends that positive interest coverage throughout the duration of the project is a condition for approval of the North West Cambridge project.**

It is normal for a large project of this nature to require a significant up-front investment before the subsequent income streams can be developed sufficiently to repay that investment. Hence it is unrealistic to require a positive interest cover throughout its duration. The intent of the project is to deliver a high quality sustainable environment and viable community with good facilities in place at the outset. It also has a high proportion of housing let at below market rent in order to provide suitable affordable accommodation to University employees. The inevitable consequence of these factors is that the project bears a higher level of infrastructure cost in its early stages, that providing a high quality environment incurs some additional cost, and that rental income does not match that which might arise on a site receiving rents charged at market rates. However, the interest rate on borrowing is fixed and therefore, over time, the impact of inflation increases income from rental streams such that interest payments are exceeded by income after the first ten years following occupation of the site. Further, the cost of additional interest (i.e. the amount by which interest exceeds income) arising in this first period is not significant compared to the overall level of borrowing, adding £7m to the outstanding debt, before interest cover becomes positive (see the chart illustrating this in the *Reporter*, 6282, 2012–13, p. 62).

- 3. The Board recommends that Council, through the Finance Committee, undertakes a comprehensive review of the total return objectives for the Cambridge University Endowment Fund in order to ensure that the targets are realistic and achievable over future rolling ten-year periods.**
- 4. The Board recommends the establishment of a process by which total return objectives for the Cambridge University Endowment Fund will be reviewed at regular intervals in order to ensure that they remain appropriate.**

The Council is pleased to note the Board's recognition of the efforts made to control budgets and to make the reporting of its financial position more transparent.

In agreeing the total return objective the Council, through the Finance Committee, considered the historical performance of the Cambridge University Endowment Fund (CUEF, formerly known as the Amalgamated Fund). The CUEF has since its inception in 1958 achieved this objective and modelling provides an acceptable probability of achieving it into the future.

The Council recognizes that the current investment and economic conditions are uncertain and has consulted its Investment Board. The Board believes that the CUEF should not take a short-term view and the current long-term perspective was consistent with past history. The Board has no reason to believe that the investment objective is not achievable and notes that the CUEF does not take on unnecessary risk in chasing a short-term target. The risk profile of the CUEF is appropriate for a perpetual endowment and the three-year rolling volatility of 11%, substantially less than the volatility of global equity markets, indicates that risks are being appropriately managed. The Board is of the view that consistency and patience were important in achieving an investment objective.

5. The Board recommends that the annual summary performance report that is distributed to investors in the Cambridge University Endowment Fund be published in the *Reporter*.

The Finance Committee has agreed to investigate whether it is possible to make further information available about the performance of the Cambridge University Endowment Fund to members of the Regent House while ensuring that all compliance considerations and the Fund's commercial operations are unaffected.

6. The Board recommends that the University Research Office take steps to create a strong and visible presence in academic departments, including establishing regular opportunities for direct interaction between URO staff and academics.

Since the beginning of 2012, the University Research Office has comprised the Research Strategy Office (RSO) and the Research Operations Office (ROO). Staff from both offices work closely together in their interactions with academic institutions. This occurs frequently in the preparation of University responses to the increasing number of exercises required of HEIs by the funding bodies. Both research offices are committed to working closely with Schools, Faculties, and Departments and the engagement between ROO and academics has been facilitated by the re-organization of the office into School-based teams, with the team supporting the Clinical School being based at Addenbrooke's Hospital. It is common practice for Schools to invite the relevant Assistant Director, who heads their School research support team, to participate in regular School management team meetings, while they are also invited to attend Council of School meetings.

In tandem, both offices work closely with academics in their Departments to investigate and engage in major funding opportunities, most involving significant interaction with academics across a wide range of University academic institutions, in the support, and development, of strategic initiatives and in planning for the REF.

7. The Board recommends that continuing priority be given to international engagement to ensure that the University remains internationally competitive. In particular, it recommends that the development of international strategy continues, that sufficient resources be allocated to the implementation of that strategy, and that their effectiveness be monitored.

The Council welcomes the Board's support for the development of an international strategy. The resources, which have been enhanced and refocused, will be kept under review as the strategy develops. The recently-established International Strategy Committee is consulting with the Colleges and others to inform the development of a paper on International Engagement for the General Board.

8. The Board recommends that the University take steps to review the optimum rate of increase in graduate student numbers and to increase co-ordination with the Colleges in this area.

Graduate numbers in the University have grown by about 2% p.a. over the past thirty years. In 2009–10, a sudden increase in admissions, particularly in one-year courses, exceeded College capacity, and a cap on such numbers was introduced. Ph.D. numbers are not capped. Discussions have since taken place with the Colleges. A University and Colleges Joint Committee working group reported during 2011–12 and supported the Council's ambition to increase postgraduate numbers by 2% p.a. at least until 2015, with further increases dependent on building projects (such as the North West Cambridge project) going ahead. This rate of growth represents a compromise between the wish of Schools to increase their graduate numbers and the ability of the Colleges to absorb these numbers, and it provides a stable basis for medium-term planning. A standing Postgraduate Admissions Committee now provides a forum for discussion of postgraduate numbers with the Colleges. No School has expressed a wish to reduce its total undergraduate numbers and the planning assumption is that undergraduate numbers will remain constant.

9. The Board recommends that there be greater oversight of Cambridge in America by the Council.

Cambridge in America is a tax-exempt organization (recognized by the U.S. Internal Revenue Service under the terms of section 501(c) (3) of the Internal Revenue Code) which funds grants that benefit Cambridge University and its member Colleges. In compliance with IRS regulations, the Board of Directors of Cambridge in America maintains complete discretion over allocation of gifts to Cambridge. Gifts to Cambridge in America qualify for an income tax deduction to the limits allowed by law. Cambridge in America therefore necessarily operates with legal independence from the University. Its Board includes the Vice-Chancellor and three other resident members of Collegiate Cambridge who are all

members of the Regent House. The funding allocated to Cambridge in America for operational purposes through the planning round is subject to the same scrutiny as other allocations to Schools and non-School institutions. The review of development activities referred to by the Board has been the subject of extensive discussion by the Council on two occasions in April and September 2012. The Council considered an investment plan for the Development Office at its meeting on 26 November for consideration through the current planning round. Its review has included the Collegiate University's relationship with Cambridge in America and how that might be improved for the benefit of more effective engagement and fundraising in the future. Ensuring that the University receives value for money for its contribution to the costs of Cambridge in America as it and the Colleges prepare for the next phase of fundraising is a principal concern and one that will be addressed through the process outlined here.

10. The Board recommends that the University Risk Register include recognition of the risks to the University, both reputational and direct, consequent upon the actions or financial circumstances of individual Colleges.

The Key Risk Register includes the risk 'Associated Bodies', which is owned by the Senior Pro-Vice-Chancellor. The risk analysis recognizes that association with certain bodies operating under the 'Cambridge brand' carries reputational and, in some cases, financial risks for the University. The list of Associated Bodies includes the Colleges. The Risk Steering Committee reviews each risk on the Key Risk Register twice a year; there is an annual review in October and an interim review in March.

The Key Risk Register is used by the internal auditor to compile the annual internal audit plan and risk management is a standing item on the agenda of the University's Audit Committee. The Audit Committee receives the annual report of the Risk Steering Committee, which includes the annual review of the Key Risk Register.

Equal Pay Review, 2012: Notice

26 November 2012

The University is committed to the principle of equal pay for work of equal value for all employees. The University aims to ensure its pay system is fair and just and that any gender bias is eliminated.

The first equal pay audit was commissioned by the University to take place in 2008 as part of the proposals in the Second Joint Report of the Council and the General Board on new pay and grading arrangements for non-clinical staff (*Reporter*, 6002, 2004–05, p. 745). The Group overseeing the content of the audit is the Equal Pay Review Group, comprising members of the Human Resources Division, Trade Union representatives, and representatives from University Schools and Departments. The Review Group's first three reports were published on the annual cycle, on 18 February 2009 (*Reporter*, 6141, 2008–09, p. 510), 21 April 2010 (*Reporter*, 6185, 2009–10, p. 688), and 15 December 2010 (*Reporter*, 6208, 2010–11, p. 318) and can be found on the HR Division website at <http://www.admin.cam.ac.uk/offices/hr/reward/pay/equal.html>. Subsequently, the University has agreed to publish an Equal Pay Review on a biennial cycle.

The Equal Pay Review 2012 is available at <http://www.admin.cam.ac.uk/reporter/2012-13/weekly/6287/EqualPayReview2012.pdf>. It brings together the following pay data as at 31 July 2012:

- gender representation and average salaries¹ (basic pay and total pay by grade, staff category, and working hours);
- salaries paid to new employees;
- market supplements;
- other pensionable and non-pensionable payments for the 12 months ending 31 July 2012, and contribution payments for assistant and academic-related staff in grades 1–11.

The Equal Pay Review 2012 includes median² and inter-quartile ranges³ where appropriate, in order to provide further insight into potential gender pay issues and for benchmarking purposes. The commentary in appendix A primarily refers to the mean pay gap, but reference is made to the median where appropriate.

The report examines the impact of the above by gender and highlights differences and pay gaps including market comparisons. It also comments on progress made on matters of concern raised in previous equal pay reviews including the equal pay Key Performance Indicators that have been identified to highlight key themes in equal pay at the University.

¹ Average (mean) salary is calculated by the single salary spine point value (or total pay if appropriate) divided by the number of instances of that value.

² The median salary is the middle value of all the payments on single salary spine point values when placed in lowest to highest order.

³ The inter-quartile range is the difference between the upper quartile (i.e. the value of all payments three quarters of the way from lowest to highest) and the lower quartile (i.e. the value of all payments one quarter of the way from lowest to highest).

Constitution of the Planning and Resources Committee: Notice

28 November 2012

The Council has agreed, on the recommendation of the Planning and Resources Committee and the General Board, to amend the membership of the Planning and Resources Committee appointed by the Council (*Reporter*, 5955, 2003–04, p. 537). Following the change in status of the Fitzwilliam Museum from a Council to a General Board institution, the requirement that at least one Council appointee is 'from an institution under their supervision' is considered to be unduly restrictive and therefore the category has been amended so as to read 'three members appointed by the Council, at least one from their own membership'.

Language Centre Annual Report, 2011–12: Notice

The Language Centre Committee of Management gives notice that the Language Centre's Annual Report for 2011–12 is now available at http://lcite.langcen.cam.ac.uk/lccm/Annual_Report_2011-12.pdf.

As a University-wide provider of language teaching and learning opportunities and information for academic, professional, and personal purposes, the Centre has produced data to demonstrate its reach across the Collegiate University. The report illustrates this reach, as well as the year-on-year increase in demand for language learning by members of the University.

Student numbers and examination results, 2011–12: Notice

The finalized 2011–12 student numbers and examination results publication has now been published by the Student Statistics Office. The data is available online at <http://www.admin.cam.ac.uk/offices/planning/ssso/> under 'Student Numbers and Examination Results, 2010–11 onwards'.

VACANCIES, APPOINTMENTS, ETC.

Electors to the Professorship of Engineering: Notice

The Council has appointed members of the *ad hoc* Board of Electors to the Professorship of Engineering as follows:

Professor John Rallison, *T*, in the Chair, as the Vice-Chancellor's deputy

(a) *on the nomination of the Council*

Professor Dame Ann Dowling, *SID*
Professor Anders Rantzer, *Lund University*

(b) *on the nomination of the General Board*

Professor Howard Chase, *M*
Professor Frank Kelly, *CHR*
Professor Mathukumali Vidyasagar, *University of Texas at Dallas*

(c) *on the nomination of the Faculty Board of Engineering*

Professor Jan Maciejowski, *PEM*
Professor Malcolm Smith, *CAI*
Professor Richard Vinter, *Imperial College London*

Electors to the Vere Harmsworth Professorship of Imperial and Naval History: Notice

The Council has appointed members of the *ad hoc* Board of Electors to the Vere Harmsworth Professorship of Imperial and Naval History as follows:

Dr Jennifer Barnes, *MUR*, in the Chair, as the Vice-Chancellor's deputy

(a) *on the nomination of the Council*

Professor Martin Daunton, *TH*
Professor Rosalind O'Hanlon, *University of Oxford*

(b) *on the nomination of the General Board*

Professor David Maxwell, *EM*
Professor Rana Mitter, *University of Oxford*
Professor Alexandra Walsham, *T*

(c) *on the nomination of the Faculty Board of Engineering*

Professor Dipesh Chakrabarty, *University of Chicago*
Dr Mark Goldie, *CHU*
Professor Megan Vaughan, *K*

EVENTS, COURSES, ETC.**Announcement of lectures, seminars, etc.**

The University offers a large number of lectures, seminars, and other events, many of which are free of charge, to members of the University and others who are interested. Details can be found on Faculty and Departmental websites, and in the following resources.

The What's On website (<http://www.admin.cam.ac.uk/whatson/>) carries details of exhibitions, music, theatre and film, courses, and workshops, and is searchable by category and date. Both an RSS feed and a subscription email service are available.

Talks.cam (<http://www.talks.cam.ac.uk/>) is a fully searchable talks listing service, and talks can be subscribed to and details downloaded.

<i>Chemical Engineering and Biotechnology</i>	<i>From structure to stomach; the use of thermal imaging methods to characterize pharmaceutical dosage forms,</i> by Professor Duncan Craig, at 2 p.m. on 5 December 2012	http://www.ceb.cam.ac.uk/ seminars.php
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REGULATIONS FOR EXAMINATIONS**Asian and Middle Eastern Studies Tripos, Parts IA, IB, and II**

(*Statutes and Ordinances*, p. 284)

With immediate effect

The supplementary regulations have been amended for the following papers of the Asian and Middle Eastern Studies Tripos as specified below:

SUPPLEMENTARY REGULATIONS**PART IA***C.1. Modern Chinese translation and writing 1*

This course is to enable students to use basic elements of Chinese grammar correctly, use Chinese over a range of everyday situations, write basic Chinese and translate English into Chinese at the sentence level, and write simple essays in Chinese.

C.2. Modern Chinese texts 1

Modern Chinese is taught intensively throughout the year, and in this paper students are required to translate passages in modern Chinese into English. This paper is mainly designed to assess the student's ability in understanding and translating simple Chinese texts.

MES.4. Hebrew language A

In this course students are introduced to the language of the Hebrew Bible. First term: after introduction to basic vocabulary and orthography (consonants and vowel points), students commence a biblical text (Jonah), during the reading of which they are gradually introduced to grammar and deal with translational and interpretive issues. Second term: the focus will be on a philologically and linguistically oriented reading of Genesis 1–4 (and possibly related texts) along with the integration of secondary literature dealing with pertinent issues of both a linguistic and non-linguistic nature.

MES.5. Hebrew language B

In this course, students acquire competence in spoken and written Modern Hebrew. Classes will cover Modern Hebrew grammar and representative texts from Modern Hebrew literature. All students doing this course also do an introductory course on Biblical Hebrew grammar in the Michaelmas Term and are required to answer one question on this in the examination.

MES.6. Introduction to the history and culture of the Middle East

This paper provides an introduction to the history of the Middle East and the political, religious, and cultural developments of the different regions and periods. It aims to familiarize the student with the sources of information available and with the main themes that will arise in studying Middle Eastern societies in subsequent years of the Tripos. The course consists primarily of lectures.

MES.7. Introduction to the contemporary Middle East

This paper provides a critical introduction to the politics, language, and culture of contemporary Middle Eastern societies. It starts with a theoretical and methodological introduction to the politics of knowledge about the Middle East, and then focuses on the historical advent of modernity in this region. In the second term, the course explores the languages and dialects of Middle Eastern societies in their political and cultural contexts. The final section of the course examines the region from the anthropological perspective, and will focus on language, gender, and social hierarchies.

PART IB

AMES.1. Cinema East

The course provides students with the opportunity to explore the film traditions of East Asia through a number of possible themes, including modernity, identity and nation, and genre. These broad concerns encompass common themes of comparative significance, such as gender, city and countryside, love, marriage, and family and violence and are expressed in genres such as melodrama. Each student will give two presentations and write two essays (1,500–2,000 words) each term, one on each of the four sections of the course; feedback on these will be given in supervisions or in group discussions.

J.5. Modern Japanese texts 2

Reading selected twentieth-century Japanese literary and non-literary texts, with attention to style and content, the aim being to gain proficiency in reading, pronouncing, translating, and interpreting modern prose.

J.6. Japanese history

Topics in the history of Japan in the 19th and 20th centuries. In order to analyse Japan's current relations with its Asian counterparts, the course also examines Japan's shifting self-image and foreign relations over the centuries, with particular focus on China.

J.7. Literary Japanese

An introduction to the grammar of literary, pre-modern Japanese, followed by readings of simple prose and poetry. Some essay work on aspects of classical literature is also required.

J.10. Japanese politics (also serves as paper Pol.10 of the Politics, Psychology, and Sociology Tripos)

An introduction to post-1945 Japanese politics examining Japan's political parties and institutions from a comparative perspective. In considering the distinctiveness of the Japanese political system, it addresses a number of central issues including Japan's economic growth, central-local government relations, the legal system, and the politics of defence and foreign policy. The paper pays particular attention to the nature of domestic political change since the mid 1990s as well as the economic and security policy challenges for a country that is increasingly active both globally and regionally. In analysing Japan's politics comparatively, the paper also addresses the issues of authorization and democratization in Korea, Korea's post-1945 political economy, and the security aspects of the Korean peninsula.

MES.14. Literary Arabic

This paper introduces students to a variety of Arabic literary texts to enhance their understanding of textual analysis and linguistic expression.

MES.19. The formation of the modern Middle East

This paper examines in some detail key moments in the formation of the modern Middle East, across regions and addressing various themes, with an emphasis on developing an understanding of periods of transition and conflict that have shaped and defined modern societies in the region since the nineteenth century. Lectures focus on Iran and Israel up to the late twentieth century, and the Arab world before and after the collapse of the Ottoman Empire.

MES.20. Contemporary Middle Eastern politics and society

This paper examines in some detail the political and social dynamics of the contemporary and modern Middle East from an anthropological perspective, focusing on particular regions or themes.

PART II

MES.34. Themes in Arabic literature

This paper introduces students to a selection of advanced texts to enhance their understanding of textual analysis and linguistic expression and to develop their knowledge of literary historical and critical approaches. One or more types of Arabic writing from one or more periods will be the focus of sustained study.

MES.35. Themes in Persian literature

This paper uses a selection of either classical or contemporary Persian poetry and prose, to study the treatment of particular themes and rhetoric techniques.

MES.36. Themes in Hebrew literature

This paper focuses on themes of interest and importance in Hebrew literature.

*Additional papers available for examination under Regulation 8**EAS.2. The East Asian region*

A seminar-based course that extends the comparative approach adopted in EAS.1. It concentrates on thematic and policy issues relevant to understanding Japan, the Korean peninsula, China (broadly defined), and also Southeast Asia, as well as the role of the United States in East Asia. The course runs over two terms and draws explicitly on historical research and social science methodology in addressing how best to conceptualize 'East Asia' as a region. Topics addressed will vary from year to year, depending on the research interests of the teaching officers involved, but an indicative list of

subjects covered in the course would include some, but not necessarily all of the following issues: the Cold War as a historical phenomenon; conflict and war in East Asia and contemporary security challenges; comparative models of economic development in East Asia and the role of 'plan-rational' policy-making; the role of the nation-state and competing models of historical identity; multilateralism, the emergence of trans-national actors and economic integration in East Asia; political legitimacy, contrasting models of authoritarian rule, and democratization as a political movement; demographic change; energy and environmental policy and technological change.

C.17. Modern Chinese literature

The course aims to introduce undergraduates to the field of modern Chinese literature as it evolved through the 20th century and up to the present. Literature, whether popular or elite, has had a vital place in modern experience. In the first term students become familiar with some of the major canonical writers and issues. Teaching in the second term is organized around a particular topic: possible examples are post-Mao and contemporary fiction; fiction and film in Republican popular culture; Chinese modernism.

C.20. Contemporary Chinese society

An introduction to key socio-political and cultural developments in reform-era China (from the early 1980s to the present), while situating them in the historical contexts of the late Imperial and Maoist periods. Topics covered will include Chinese political culture, kinship and marriage, reproduction and family planning, gender and sexuality, urban and rural lives, ethnic minorities, religion, state and society, nationalism, migration, the Chinese diaspora, etc. The analytical approaches are drawn from anthropology, political science, sociology, and cultural studies.

J.14. Classical Japanese texts

The course focuses on texts of the Tokugawa period and requires previous knowledge of classical Japanese (J7).

MES.38. History of the modern Middle East

This paper explores Islamic reform and piety in the twentieth century. It does so from the complementary perspectives of anthropology and intellectual history. Modernist Islamic thinkers in this period grappled with the question 'what is Islam?' and 'how should we read the Quran?' Their thought inspired and informed social and political movements in the Arab world and beyond which have been concerned with the right way to understand and practice Islam. Students will read three Arabic texts by modernist Islamic thinkers, and consider anthropological and ethnographic analyses of relevant issues including history, ritual, and secularism. Students not taking Arabic will be provided with translations in class.

MES.40. Special subject in the contemporary Middle East

This paper provides a focused analysis of a particular subject relating to the contemporary Middle East. Students may choose one of two subjects which will be announced by the Faculty Board.

The Faculty Board of Asian and Middle Eastern Studies have confirmed that no candidate's preparation for the examination will be affected.

Examination in Environmental Design in Architecture for the M.Phil. Degree

(Statutes and Ordinances, p. 519)

With effect from 1 October 2013

On the recommendation of the Degree Committee for the Faculty of Architecture and History of Art, the General Board have agreed that the subject Environmental Design in Architecture (Option A (one-year course) and Option B (two-year course)) be replaced by two new subjects; Architecture and Urban Studies (replacing Option A) and Architecture and Urban Design (replacing Option B), and that the examination for the subject Environmental Design in Architecture be rescinded for candidates admitted from 1 October 2013. Special regulations for the examinations in the two subjects have been approved as follows:

ARCHITECTURE AND URBAN STUDIES

1. The scheme of examination for the one-year course of study in Architecture and Urban Studies for the degree of Master of Philosophy shall consist of:
 - (a) a thesis, of not more than 20,000 words in length, excluding appendices and bibliography, on a topic approved by the Degree Committee for the Faculty of Architecture and History of Art;
 - (b) four essays or other exercises, each of not more than 3,000 words, on topics specified by the Degree Committee.
2. The examination may, at the discretion of the Examiners, include an oral examination on the thesis or on the general field of knowledge within which it falls.

ARCHITECTURE AND URBAN DESIGN

1. Candidates for the two-year course of study in Architecture and Urban Design for the degree of Master of Philosophy shall be required to undertake a placement of nine months' duration in an architectural practice or a similar alternative arrangement approved by the Degree Committee for the Faculty of Architecture and History of Art.
2. The scheme of examination shall consist of:
 - (a) a design thesis, of not more than 15,000 words in length, excluding appendices and bibliography, and including drawn material, on a topic approved by the Degree Committee for the Faculty of Architecture and History of Art;
 - (b) four essays or other exercises, each of not more than 3,000 words, on topics specified by the Degree Committee;
 - (c) one further essay, of not more than 3,000 words, on current practice and the cultural context of architecture;
 - (d) a logbook of a case study carried out during the placement.
3. The examination may, at the discretion of the Examiners, include an oral examination on the design thesis or on the general field of knowledge within which it falls.

Examination in Russian Studies for the M.Phil. Degree

(*Statutes and Ordinances*, p. 534)

With effect from 1 October 2013

The General Board, on the recommendation of the Faculty Board of Modern and Medieval Languages, have agreed that the examination in Russian Studies for the M.Phil. Degree be suppressed and the special regulations for the examinations be rescinded with effect from 1 October 2013.

FORM AND CONDUCT OF EXAMINATIONS, 2013

Notices by Faculty Boards, or other bodies concerned, of changes to the form and conduct of certain examinations to be held in 2013, by comparison with those examinations in 2012, are published below. Complete details of the form and conduct of all examinations are available from the Faculties or Departments concerned.

Classical Tripos, Part IA, 2013

The Faculty Board of Classics give notice that with effect from the examination to be held in 2013, the form of the examination for the following paper for Part IA of the Classical Tripos will be as specified below:

Paper 5. Greek and Latin texts (also serves as Paper GL5 of Part IA of the Modern and Medieval Languages Tripos)

This paper will contain questions on works contained in the schedules of Greek and Latin texts prescribed for Papers 1 to 4. The paper will contain questions on six passages. The first three passages will be passages of Greek prose and verse, two of which will come from the texts prescribed for Section (a) of Paper 2. The latter three passages will be passages of Latin prose and verse, two of which will come from texts prescribed for Section (a) of Paper 4. The first five questions on each passage will be focused on detailed understanding of the language and the final question will ask for an extended analysis and appreciation.

Candidates will be required to answer questions on two passages, one Greek and one Latin. Any verse passage set may include a question testing knowledge of scansion.

All other papers remain unchanged.

Economics Tripos, 2013

The Faculty Board of Economics give notice that with effect from the examinations to be held in 2013, the form of the examination will be changed as follows:

PART I

Paper 3. Quantitative methods in economics

The paper will be examined by a three-hour written paper only (instead of a three-hour written paper and project work), and the weightings of the four sections within the paper have been revised as follows:

- Section A: 30% (previously 24%)
- Section B: 20% (previously 16%)
- Section C: 30% (previously 24%)
- Section D: 20% (previously 16%)

A Statistical Formula sheet will no longer be provided for the paper.

PART IIb

Paper 2. Macroeconomic principles and problems

The structure of the paper will now be divided in three sections: Section A: *Business cycle theory*; Section B: *Economic growth*; Section C: all the other parts of the paper. Two questions will be set for Sections A and B, and six questions set for Section C. For each topic there will be an essay-based question and a problem-based question. Students will be required to answer a total of four questions, with at least one question from each section. Each question will carry equal weight.

PART IIb

Paper 6. Banking, money, and finance

The Course on *Credit and financial development* will now be included under Section A: *Corporate finance*.

PART IIb

Paper 9. Industry

Currently this paper has two sections. Students are required to answer four questions in total, one out of three questions in Section A, and three out of eight questions in Section B.

The number of questions set in Section B will be reduced from eight to seven, with students being required to answer three questions out of seven.

PART IIb

Paper 10. Theory and practice of econometrics II

The number of questions in Sections A and B and the number of questions candidates are required to answer in each section will be changed as follows:

Section A (two thirds of the allocation of marks)

This section will contain six short questions (instead of five), two from each of the three course components: *Microeconometrics*; *Econometric methods*; *Time series methods*. Students will be required to answer four questions (instead of two).

Section B (one third of the allocation of marks)

This section will contain three slightly longer questions (instead of four), one from each of the three course components: *Microeconometrics*; *Econometric methods*; *Time series methods*. Students will still be required to answer one question.

All other papers remain unchanged. Full details of the examination can be found by following the appropriate links from <http://www.econ.cam.ac.uk/intranet/exams/FORM-AND-CONDUCT-OF-EXAMINATION-PAPERS-FOR-THE-ECONOMICS-TRIPOS.pdf>.

Engineering Tripos, 2013

The Faculty Board of Engineering give notice that with effect from the examinations to be held in 2013, the form of the examinations for the following papers of the Engineering Tripos will be as follows:

PART IA

Lecture course

Mechanical engineering

Thermofluid mechanics (24L)

Mechanics and mechanical vibrations (28L)

Structures and materials

Structures (24L)

Materials (20L)

Electrical and information engineering

Linear circuits and devices (22L)

Digital circuits and information processing (16L)

Electromagnetics (12L)

Paper

Paper 1

Section A (4 short questions and 2 long questions)

Section B (4 short questions and 2 long questions)

Paper 2

Section A (4 short questions and 2 long questions)

Section B (4 short questions and 2 long questions)

Paper 3

Section A (3 short questions and 2 long questions)

Section B (3 short questions and 1 long question)

Section C (2 short questions and 1 long question)

Lecture course	Paper
<i>Mathematical methods</i>	<i>Paper 4</i>
Michaelmas Term material (24L)	Section A (3 short questions and 2 long questions)
Lent/Easter Term material (16L)	Section B (3 short questions and 2 long questions)
Computing	Section C (2 short questions)

Candidates will be expected to attempt all the questions on all the papers.

Each paper will last three hours. Candidates will be admitted to the examination room 15 minutes before the scheduled time of the examinations and will be given a reading time of 10 minutes before being allowed to start writing.

PART IB

Examination	Number of questions
<i>Paper 1: Mechanics</i>	6
<i>Paper 2: Structures</i>	6
<i>Paper 3: Materials</i>	6
<i>Paper 4: Thermofluid mechanics</i>	
Heat transfer and thermodynamics	3
Fluid mechanics	3
<i>Paper 5: Electrical engineering</i>	
Linear circuits and devices	2
Electrical machines	3
Electromagnetic fields and waves	2
<i>Paper 6: Information engineering</i>	
Linear systems and control	3
Communications, and signal and data analysis	3
<i>Paper 7: Mathematical methods</i>	
Vector calculus	3
Linear algebra and probability	3
<i>Paper 8: Selected topics</i>	
Paper 8 is divided into eight sections.	
Section A: Introductory business economics	2
Sections B–H:	
(B) Civil and structural engineering	3
(C) Mechanics, materials, and design	3
(D) Aerothermal engineering	3
(E) Electrical engineering	3
(F) Information engineering	3
(G) Engineering for the life sciences	3
(H) Manufacturing, management, and design	3

Candidates will be admitted to the examination room 15 minutes before the scheduled time of the examinations and will be given a reading time of 10 minutes before being allowed to start writing.

For Papers 2–3: Candidates are required to answer not more than four questions, which may be taken from either section.

For Papers 1, 4, 6, 7: Candidates are required to answer not more than four questions, with not more than two questions answered from each section.

For Paper 5: Candidates are required to answer not more than four questions. Not more than two questions may be answered from any one section and not more than one question from each of the other two sections.

For Paper 8: Candidates are required to answer not more than one question from Section A and in addition:

- Candidates not taking the Foreign Language option are required to answer not more than four questions, taken from only two of Sections B–H. Not more than two questions from each section may be answered.
- Candidates taking the Foreign Language option are required to answer not more than two questions from one of Sections B–H.

The examinations for Papers 1–7 will last for two hours. The examination for Paper 8 will last for two and a half hours, except for candidates who are taking the Foreign Language option when it will last for one and a half hours.

Additional notes:

- i. All questions in all papers will carry equal weight.
- ii. The Foreign Language option in Paper 8 will carry equal weight to each of sections B–H on Paper 8.
- iii. The Examiners will take into account course-work produced by candidates (in computing, experimental engineering, and design) according to the scheme in the notice published by the Secretary of the Faculty Board (September 2012; http://www.eng.cam.ac.uk/teaching/teachoff/regulations/IB_Cw_Notice.pdf).

- iv. Candidates are reminded that any paper in the Part IB examination may contain questions on course-work associated with the subjects examined in that paper.
- v. A booklet of standard data books will be available at all examinations. Where the Examiners consider a particular data book to be useful for a particular paper, it will be placed on each candidate's desk before the start of the examination for that paper.
- vi. Candidates will be allowed to take into the Examination Room only officially marked calculators as explained in the Notice concerning calculators (see *Reporter*, 6279, 2012–13, p. 20).
- vii. In the working of all questions, and in the evaluations of numerical quantities, candidates should show a sufficient number of steps for the Examiners to make a proper assessment of their answers.

PART IIA

	<i>Module title</i>	<i>Written paper (p); course-work (c)</i>	<i>Number of questions on the paper</i>	<i>Number of questions to be attempted</i>
3A1	Fluid mechanics I (double module)	p	8	5
3A3	Fluid mechanics II (double module)	p	8	5
3A5	Thermodynamics and power generation	p	4	3
3A6	Heat and mass transfer	p	4	3
3B1	Radio frequency electronics	p	4	3
3B2	Integrated digital electronics	p	4	3
3B3	Switch-mode electronics	p	4	3
3B4	Electric drive systems	p	4	3
3B5	Semiconductor engineering	p	4	3
3B6	Photonic technology	p	4	3
3C1	Materials processing and design	p	4	3
3C5	Dynamics	p	4	3
3C6	Vibration	p	4	3
3C7	Mechanics of solids	p	4	3
3C8	Machine design	P	4	3
3C9	Fracture mechanics of materials and structures	p	4	3
3D1	Geotechnical engineering I	p	4	3
3D2	Geotechnical engineering II	p	4	3
3D3	Structural materials and design	p	4	3
3D4	Structural analysis and stability	p	4	3
3D5	Water engineering	p	4	3
3D7	Finite element methods	p	4	3
3D8	Building physics and environmental geotechnics	p	4	3
3E1	Business economics	p	4	2
3E2	Marketing	p	4	2
3E3	Modelling risk	p	4	2
3E5	Human resource management	p	4	2
3E6	Organizational behaviour	p	4	2
3E10	Operations management for engineers	p	4	2
3F1	Signals and systems	p	4	3
3F2	Systems and control	p	4	3
3F3	Signal and pattern processing	p	4	3
3F4	Data transmission	p	4	3
3F5	Computer and network systems	p	4	3
3F6	Software engineering and design	p	4	3
3G1	Introduction to molecular bioengineering	p	4	3
3G2	Mathematical physiology	p	4	3
3G3	Introduction to neuroscience	p	4	3
3G4	Medical imaging and 3-D computer graphics	p	Section A: 2 Section B: 2 Section C: 2	1 1 1
3G5	Biomaterials	p	4	3
3M1	Mathematical methods	p	4	3
4C4	Design methods	p	4	3
4D16	Construction and management	p and c	5	3
4M12	Partial differential equations and variational methods	p	4	3
4M16	Nuclear power engineering	p	4	3

The examinations will begin on Monday, 22 April 2013 and will be completed by Wednesday, 8 May 2013. The timetable will be fixed later in the academical year and published alongside details of the venue for the exams, which will be on the New Museums Site.

Single module examinations will last one hour and 30 minutes. Double module examinations (3A1 and 3A3) will last three hours. There will be 10 minutes of 'reading time' before each module (including double modules). Candidates should present themselves in the examination room 15 minutes before the advertised start time of each paper. Late arrivals disturb other candidates; please arrive in plenty of time.

Details of the numbers of questions on the examination papers are given in the table below.

The style of new module papers will be similar to those of any 'sample papers' issued to candidates during the year.

The Examiners will take into account course-work produced by candidates according to the scheme published by the Faculty Board.

Standard databooks will be available at all examinations. Where additional data sheets or databooks were provided for a particular course they will be attached to the relevant examination paper.

Candidates will be allowed to take into the Examination Hall only officially marked calculators as set out in the Notice concerning calculators (see *Reporter*, 6279, 2012–13, p. 20).

In the working of all questions and in the evaluation of numerical quantities candidates should show a sufficient number of steps to allow the Examiners to make a proper assessment of their answers.

Candidates are reminded that illegible writing may result in loss of marks.

PART IIB

1. Written examinations for Part IIB of the Engineering Tripos will start on Monday, 22 April 2013 and end on or before Wednesday, 8 May 2013.

The list of modules with written examinations, together with the numbers and distribution of questions for each examination paper, is shown in the table below. A detailed timetable of the examinations, including venue details, will be published during the Lent Term.

All written examinations will last for one and a half hours, unless stated otherwise below. Candidates will be admitted to the examination room 15 minutes before the scheduled time of the examinations and will be given a reading time of 10 minutes before being allowed to start writing, except in the case of 4I8 Medical Physics.

2. Each candidate shall offer eight modules in total unless the Faculty Board has exceptionally given permission for substitution of a dissertation for one module. For each module in the Tripos, the form of examination is by either (i) course-work only, or (ii) written paper only, or (iii) a mixture of course-work and written paper. All modules carry an equal weight regardless of the method of assessment. Where a module is assessed by the combination of written paper and course-work, the course-work will carry weight equal to one quarter of one module with the written paper carrying three-quarters of the module weight. In the exceptional case of a dissertation being submitted in place of a module, the dissertation will carry weight equal to one module.

3. Each candidate shall also submit a report on a project that he or she is undertaking during the academical year.

The project will carry marks equal to six modules.

This project report must be handed into the Department on or before 4 p.m. on Wednesday, 29 May 2013 to the relevant Group Centre, details of which are given in the document 'Second Notice about Fourth Year Projects' dated June 2012.

4. Students who obtain a mark of at least lower second-class equivalent standard in their project, at least third class equivalent standard in their combined module marks and at least lower second class equivalent standard overall (the project total being given weight equivalent to three quarters of the module total) will normally graduate with the M.Eng. Degree, as well as the B.A. Degree.

Candidates who are judged to be of first class standard in both their module aggregate and their project will be awarded a distinction. Candidates who are not of distinction standard but who are judged to be of at least upper second class standard in both their module aggregate and their project will be awarded a merit grade. In other respects the examination will not be classed.

5. Any course-work associated with modules will be specified by the module leader along with dates by which the work has to be handed in for assessment. Course-work that has been marked and returned to candidates should be kept in a safe place. Candidates will have to return it to the Department in the Easter Term 2013 for scrutiny by the Examiners.

Failure to keep course-work and failure to hand it in complete with the assessor's comments could result in the Examiners querying the validity of both the work and the marks. Please watch out for further notices giving details of the arrangement for handing in course-work.

The candidates must ensure that their names and the module title are clearly written on each course-work submission, which must be separately bound and submitted for each module together with the assessor's comments and markings. This set of course-work produced by each student should then be handed in, ideally within a single folder, clearly marked with the student's name and College.

6. The examination for module 4C7 will be specified as an 'open book' examination as defined in the form and conduct notice.

For this 'open book' module examination, candidates are authorized to bring into the examination room any lecture notes issued by the module lecturers on that particular module, together with lecture notes on that module written personally by the student in his or her own handwriting. No other material is authorized to be brought into the examination room. Permitted notes for one 'open book' module may not be brought into the examination on any other module. In all other modules the normal rules of University Examinations apply and no written material or lecture notes may be brought into the examination room.

7. The examination for module 4I8, a module in Part III of the Physics Tripos, will be taken under the rules applying to examinations in that Tripos. There will therefore be no reading time at the beginning of the examination for this module. Candidates will be able to enter the examination room 10 minutes before the start time to find their seat.

8. Standard data books as used in Part I of the Engineering Tripos will be available at all examinations. Where additional data sheets or data books were provided for a particular module these will be made available in the relevant examination.

9. Candidates will be allowed to take into the Examination Room only officially marked calculators as explained in the Notice concerning calculators (*Reporter*, 6279, 2012–13, p. 20).

10. In the working of all questions, and in the evaluation of numerical quantities, candidates should show a sufficient number of steps, along with adequate explanation of their reasoning, to allow the Examiners to make a proper assessment of their answers. Candidates are reminded that illegible writing may put them at a serious disadvantage.

11. In all papers, the different questions on each paper carry the same number of marks, unless specifically stated otherwise. Questions which have been divided into sections will have a percentage mark beside each section. This percentage will be indicative of the relative weighting that examiners expect to attach to that section in their marking of the question. Examiners reserve the right to vary this percentage for flair or other factors demonstrated by the candidates.

12. Sample question papers will not be prepared, but for new modules or modules significantly changed from last year, the candidates may expect examples papers to be given out by the lecturers on the module and these examples papers will contain some questions which give an indication of the style and difficulty which may be expected in any written examination on that module.

<i>Number/Title/Method of Assessment</i> (written paper (p), coursework (c))		<i>Number of questions</i> <i>on the paper</i>	<i>Number of questions</i> <i>to be attempted</i>
4A3	Turbomachinery I (p and c)	3	2
4A9	Molecular thermodynamics (p)	4	3
4A10	Flow instability (p)	4	3
4A11	Turbomachinery II (p and c)	3	2
4A12	Turbulence and vortex dynamics (p)	4	3
4A13	Combustion and IC engines (p)	4	3
4A15	Aeroacoustics (p)	4	3
4B2	Power microelectronics (p)	4	3
4B5	Nanotechnology (p and c)	5	3
4B6	Solid state devices and chemical/biological sensors (p)	4	3
4B7	VLSI design, technology, and CAD (p and c)	5	3
4B11	Photonic systems (p)	4	3
4B13	Electronic sensors and instrumentation (p)	5	3
4B14	Solar-electronic power: generation and distribution (p and c)	4	3
4B19	Renewable electrical power (p)	4	3
4B20	Display technology (p)	4	3
4B21	Analogue integrated circuits (p)	4	3
4C2	Designing with composites (p and c)	4	3
4C3	Electrical and nano materials (p)	5	3
4C4	Design methods (p)	4	3
4C6	Advanced linear vibrations (p and c)	4	3
4C7	Random and non-linear vibrations (p and c)	4	3
4C8	Applications of dynamics (p and c)	4	3
4C9	Continuum mechanics (p)	3	2
4C15	MEMS: design (p and c)	4	3
4C16	Advanced machine design (p and c)	3	3
4D5	Foundation engineering (p and c)	4	3
4D6	Dynamics in civil engineering (p and c)	4	3
4D7	Concrete structures (p and c)	4	3
4D10	Structural steelwork (p and c)	4	3
4D14	Contaminated land and waste containment (p and c)	4	3
4D16	Construction and management (p and c)	5	3
4F1	Control system design (p and c)	3	2
4F2	Robust and non-linear control (p)	4	3
4F3	Optimal and predictive control (p)	4	3
4F6	Signal detection and estimation (p)	4	3
4F7	Digital filters and spectrum estimation (p)	4	3
4F8	Image processing and image coding (p)	4	3
4F10	Statistical pattern processing (p)	5	3
4F11	Speech and language processing (p)	4	3
4F12	Computer vision and robotics (p)	4	3
4G6	Cellular and molecular biomechanics (p)	4	3

<i>Number/Title/Method of Assessment</i> (written paper (p), coursework (c))		<i>Number of questions on the paper</i>	<i>Number of questions to be attempted</i>
4I5	Nuclear materials (p)	3	2
4I8	Medical physics (p)	3	2
4M6	Materials and processes for microsystems (MEMS) (p and c)	4	3
4M12	Partial differential equations and variational methods (p)	4	3
4M15	Sustainable energy (p and c)	3	2
4M16	Nuclear power engineering (p)	4	3

Full details of the examinations for all Parts of the Tripos can be found at <http://www.eng.cam.ac.uk/teaching/>.

Preliminary Examination for the Historical Tripos, 2013

The Faculty Board of History give notice that with effect from the examinations to be held in 2013, the form of the examinations for certain papers of the Preliminary Examination for Part I and Part II of the Historical Tripos will be as follows:

PART I

Section D, European history

Paper 17. European history, 1715–1890

The paper will no longer be divided into Section A and Section B; candidates will still be required to answer three questions.

PART II

Section D, Specified Subjects

Paper 22. 'Total War' and European societies, 1792–1815

This paper is being examined for the first time. There will be one three-hour examination paper. Candidates will be required to answer three questions.

PART II

Dissertation

The minimum length of the dissertation has been increased from not less than 7,000 words to not less than 10,000 words.

Section B

Paper 2ii. Special Subject: long essay

The length of the submitted essay has been increased from '5,000 to 6,000 words' to '6,000 to 7,000 words'.

All other papers remain unchanged. Full details of the examination can be found at <https://www.hist.cam.ac.uk/undergraduate/examinations>.

Land Economy Tripos, 2013

The Board of Land Economy give notice that, with effect from the examinations to be held in 2013, the form of the examinations for certain papers for the Land Economy Tripos will be changed as follows:

PART IB AND PART II

Paper 10. The built environment

The paper will be divided into three sections: A, B, and C (instead of two sections, A and B). Section A will contain no fewer than four questions, of which candidates will be required to answer two and Sections B and C will contain no fewer than three questions each, of which candidates will be required to answer one question from each section.

All other papers remain unchanged. Full details of the examination can be obtained at http://www.landecon.cam.ac.uk/intranet/tripos/exams/form_and_conduct/LEFormConductNotice2013-3-10-12.pdf.

PART II

Paper 15. Advanced techniques in finance and investment for real estate

This paper will not have a project as part of the examination in 2013. The paper will be divided into two sections. Section A will contain no fewer than four empirical or problem-oriented questions. Section B will contain no fewer than four essay-type questions. Candidates will be required to answer four questions, two from each section.

Manufacturing Engineering Tripos, 2013

The Faculty Board of Engineering give notice that with effect from the examinations to be held in 2013, the form of the examinations for the following papers of the Manufacturing Engineering Tripos will be as follows:

PART IIA

1. There will be six written examination papers, as follows:

Paper 1 (Single module)	Materials into products
Paper 2 (Single module)	Operation and control of production machines and systems
Paper 3 (Double module)	Operations management; Industrial engineering
Paper 4 (Double module)	Organizational behaviour; Managing business and people
Paper 5 (Double module)	Financial and management accounting; Industrial economics, strategy, and governance
Paper 6 (Single module)	Contemporary issues in manufacturing

Candidates take all six papers. Single module papers are each worth 60 marks; double module papers are each worth 120 marks.

2. In addition to the six examination papers, candidates take Module 3P3 (Design) which is assessed by course-work only. 60 marks are available for this paper.

3. The examinations for papers 1 and 6 will each last one and a half hours. Candidates will be expected to answer three questions on each paper.

The examination for paper 2 will last one and a half hours. Candidates will be expected to answer two questions.

The examinations for papers 3, 4, and 5 will each last three hours. Candidates will be expected to answer four questions on each paper.

4. Paper 1 contains four questions; candidates are expected to answer three questions.

Paper 2 is divided into two sections. Section A (Operation of production machines and systems) contains two questions; candidates are expected to answer one question. Section B (Control of production machines and systems) contains two questions; candidates are expected to answer one question.

Paper 3 is divided into two sections, each containing two questions; candidates are expected to answer both questions in each section.

Paper 4 is divided into three sections. Section A (Organizational behaviour) contains four questions; candidates are expected to answer two questions. Sections B and C (Managing business and people) each contain two questions; candidates are expected to answer one question from each section.

Paper 5 is divided into four sections, each containing two questions; candidates are expected to answer one question from each section.

Paper 6 is divided into three sections, each containing one question; candidates are expected to answer all questions.

5. The Examiners will take into account course-work done by candidates as follows:

Major project:	140 marks
CAD/CAM exercise:	50 marks
Production game:	50 marks

PART IIB

Examinations

1. There will be two written papers, each marked out of 100 marks, totalling 200 marks. Candidates take both papers. The examinations for each paper will last three hours. Each paper will comprise six questions. Candidates will be expected to answer four questions on each paper.

2. There will be six module assessments, totalling 100 marks. The marks available for each module will be as follows:

Production technologies and materials:	30 marks
Industrial systems operations and services:	10 marks
Managing people:	15 marks
Sustainable manufacturing:	15 marks
Technology and innovation management:	15 marks
Strategy and marketing:	15 marks

Course-work

3. The Examiners will take into account course-work produced by candidates as follows:

300 marks divided as follows:

Manufacturing systems and robot lab:	45 marks
One two-week industrial assignment:	35 marks
One four-week industrial assignment:	70 marks
Individual long project:	150 marks

4. Candidates who obtain a mark of at least lower second class equivalent standard in both the examinations and in the course-work will normally graduate with the M.Eng. Degree, as well as the B.A. Degree. Candidates who obtain a mark of at least upper second class equivalent standard in both the examinations and in the course-work will be awarded a merit. Candidates who obtain a mark of at least first class equivalent standard in both the examinations and in the course-work will be awarded a distinction. In other respects the examination will not be classed.

Medical and Veterinary Sciences Tripos, 2013

The Faculty Board of Biology give notice that the form of the examinations for the Medical and Veterinary Sciences Tripos, Part IA, which will be held in 2013, has changed as follows:

PART IA

Functional architecture of the body

Section III will last two hours and will carry 50% of the total mark. Section III will be divided into two parts, each containing three questions. Candidates will be required to answer one question from each part, spending 60 minutes on each. Each question will carry an equivalent mark. Part A will require an answer in essay format and will examine the ability to integrate structure with function and to construct logical arguments. Part B will also be in essay format and will assess the ability to apply anatomical knowledge to a clinical situation or problem and to deduce basic clinical implications from first, anatomical principles. Neither part will require any more detailed factual knowledge of anatomy than Sections I and II.

The format of Sections I and II will remain unchanged.

Veterinary anatomy and physiology

Section III will last two hours and will carry 50% of the total mark. Section III will be divided into two parts, each containing three questions. Candidates will be required to answer one question from each part, spending 60 minutes on each. Each question will carry an equivalent mark. Part A will require an answer in essay format and will examine the ability to integrate structure with function and to construct logical arguments. Part B will also be in essay format and will assess the ability to apply anatomical knowledge to a clinical situation or problem and/or to deduce basic clinical implications from first principles.

The format of Sections I and II will remain unchanged.

The Faculty of Biology confirms that no student will be disadvantaged by these changes.

Natural Sciences Tripos, 2013

The Committee of Management for the Natural Sciences Tripos give notice that, with effect from the examinations to be held in 2013, the form and conduct of certain of the examinations for the Natural Sciences Tripos will be changed as follows:

PART IA

Computer Science

The form and conduct for the Computer Science paper is as announced for Paper 1 of the Computer Science Tripos.

Materials Science

The written examination paper will count for 85% of the total mark for Part IA Materials Science. Practical work will be continuously assessed throughout the year and will count for 15% of the total mark for Part IA Materials Science. Full details are available at: <http://www.msm.cam.ac.uk/teaching/>.

PART IB

Cell and Developmental Biology

Practical paper

The practical paper will be divided into three sections.

Section A

Candidates will be asked to answer all eight short questions set. Candidates should aim to spend one hour on Section A.

Section B

Candidates will be asked to answer three questions out of four questions set. Candidates should aim to spend thirty minutes on each answer in Section B.

Section C: Experimental design

Candidates will be asked to answer one question out of two questions set. Candidates should aim to spend thirty minutes on the answer to Section C.

All other papers remain unchanged. A specimen paper will be provided.

Chemistry A

There are two three-hour written papers set for Chemistry A, papers A1 and A2.

Each paper will contain five questions of equal weight; candidates are required to answer all five questions.

Paper A1 will contain two questions relating primarily to the material presented in the lecture course 'Introduction to quantum mechanics', one question relating primarily to the material presented in the lecture course 'Molecular spectroscopy' and two questions relating primarily to the material presented in the lecture course 'Symmetry and bonding'. Any question may, however, draw on material from the whole of the Chemistry A course.

Paper A2 will contain three questions relating primarily to the material presented in the lecture course 'Molecular energy levels and thermodynamics' and two questions relating primarily to the material presented in the lecture course 'Electrons in solids'. Any question may, however, draw on material from the whole of the Chemistry A course.

Chemistry B

There are two three-hour written papers set for Chemistry B, papers B1 and B2.

Each paper will contain five questions of equal weight; candidates are required to answer all five questions.

Paper B1 will contain four questions relating primarily to the material presented in Michaelmas Term and one question relating primarily to the material presented in the lecture course 'Introduction to chemical biology'. Any question may, however, draw on material from the whole of the Chemistry B course.

Paper B2 will contain four questions relating primarily to the material presented in Lent Term and one question relating primarily to the material presented in the lecture course 'Introduction to chemical biology'. Any question may, however, draw on material from the whole of the Chemistry B course.

Experimental Psychology

For the purposes of the examination, 'Intelligence testing and IQ' will now be assessed along with 'Social psychology'; material pertaining to 'Intelligence testing and IQ' topics will be assessed in Paper 2, Section B (and not in Paper 2, Section C, as in previous years). No other aspects of the examination have changed.

Materials Science

The written examination papers will count for 85% of the total mark for Part Ib Materials Science.

Practical work will be continuously assessed throughout the year and will count for 15% of the total mark for Part Ib Materials Science.

Full details are available at <http://www.msm.cam.ac.uk/teaching/>.

PART II

Materials Science

Paper 1 of the written examination will be a general paper covering a range of topics from the course. On paper 1, there will be a single question and the rubric will read 'Answer all parts of the question'. Paper 1 will count for 15% of the total mark for Part II Materials Science.

Papers 2–4 will each consist of eight questions, based primarily on a grouping of lecture courses as advertised on the Department website and noticeboard before the beginning of Michaelmas Term. On each of papers 2–4, the rubric will read 'Answer five questions. All questions carry equal credit.' Papers 2–4 will each count for 20% of the total mark for Part II Materials Science.

Continuously-assessed work is unchanged and counts for 25% of the total mark for Part II Materials Science.

Full details are available at <http://www.msm.cam.ac.uk/teaching/>.

PART III

Interdisciplinary paper IDP2: The Earth system and climate change

(This is an amendment to the Notice published in the *Reporter* on 7 June 2012; see *Reporter*, 6269, 2011–12, pp. 694–5.)

Practical examinations for Geological Sciences candidates only, will now take the form of one two-and-a-half-hour practical examination in the Easter Term instead of assessed practicals during the Lent Term.

Full details of the examinations can be obtained in the relevant course booklet.

Materials Science (Part III)

Paper 1 of the written examination will be worth 18% of the total marks for Part III Materials Science. The vacation report and presentation will be worth 2% of the total marks for Part III Materials Science.

All other parts of the examination remain unchanged.

Full details are available at <http://www.msm.cam.ac.uk/teaching/>.

Materials Science (Master of Advanced Study, M.A.St.)

Paper 1 of the written examination will be worth 18% of the total marks for the Master of Advanced Studies in Materials Science. The vacation report and presentation will be worth 2% of the total marks for the Master of Advanced Studies in Materials Science.

All other parts of the examination remain unchanged.

Full details are available at <http://www.msm.cam.ac.uk/teaching/>.

Bachelor of Theology for Ministry

The Faculty Board of Divinity give notice that, with effect from the examinations to be held in 2013, the form will be changed as follows:

Paper 13. Reform and renewal in Christian history

Candidates will be required to:

(a) sit a two-hour examination, consisting of two sections, and to answer one question from each section. Section A will contain at least four questions on the Protestant Reformation in Europe, *ca.* 1517–1618, and Section B will contain at least four questions on the Catholic Reformation in Europe, *ca.* 1492–1618;

and

(b) offer one essay title from a list approved by the Faculty Board, submitted in accordance with the requirements of Regulation 15. Essay questions will be based on Section C of the teaching: Theological and comparative issues and the English Reformation.

All other papers remain unchanged.

NOTICES BY FACULTY BOARDS, ETC.

Mathematical Tripos, Part III, 2013: Amendment

Further to their Notice of 31 October 2012 (*Reporter*, 6283, 2012–13, p. 91), in accordance with Regulations 16 and 17 for the Mathematical Tripos, the Faculty Board of Mathematics give notice that there will be set in 2013 if candidates desire to present themselves therein, two additional papers as follows:

Paper 74: Reading course: Topos theory (three hours)

Paper 75: Reading course: Quantum condensed matter field theory (three hours)

Natural Sciences Tripos, Part III: Entry requirements, 2013–14

The Committee of Management for the Natural Sciences Tripos, in consultation with the Faculty Boards of Physics and Chemistry, Biology, Earth Sciences and Geography, and the Board of History and Philosophy of Science, has defined the standards required for entry to each subject of Part III of the Natural Sciences Tripos (see Regulation 5(a) for the Tripos (*Statutes and Ordinances*, p. 399)), **with effect from the courses commencing in the academic year 2013–14**, as follows (inserted text added to the section on consideration of special cases underlined):

Astrophysics

In order to be a candidate for honours in Astrophysics in Part III of the Natural Sciences Tripos, a student should have obtained at least a II.1 in Astrophysics or Physics in Part II of the Natural Sciences Tripos or in Part II of the Mathematical Tripos.

Biochemistry

In order to be a candidate for honours in Biochemistry in Part III of the Natural Sciences Tripos, a student should have obtained at least a II.1 in Biochemistry in Part II of the Natural Sciences Tripos.

Chemistry

In order to be a candidate for honours in Chemistry in Part III of the Natural Sciences Tripos, a student should have obtained at least a II.1 in Chemistry in Part II of the Natural Sciences Tripos.

Experimental and Theoretical Physics

In order to be a candidate for honours in Experimental and Theoretical Physics in Part III of the Natural Sciences Tripos a student should:

- either* (a) have obtained at least a II.1 in Experimental and Theoretical Physics in Part II;
- or* (b) have obtained a II.1 in Part II Physical Sciences with at least 70% in Half Subject Physics;
- or* (c) have obtained at least a II.1 in Part II Astrophysics;
- or* (d) have obtained at least a II.1 in Part II of the Mathematical Tripos.

Geological Sciences

In order to be a candidate for honours in Geological Sciences in Part III of the Natural Sciences Tripos, a student should:

- either* have obtained at least a II.2 in Geological Sciences in Part II of the Natural Sciences Tripos;
- or* have obtained a II.2 in Part II Physical Sciences with at least 70% in Half Subject Geological Sciences.

Materials Science

In order to be a candidate for honours in Materials Science in Part III of the Natural Sciences Tripos, a student should have obtained at least a II.1 in Materials Science in Part II of the Natural Sciences Tripos.

History and Philosophy of Science

In order to be a candidate for honours in History and Philosophy of Science in Part III of the Natural Sciences Tripos, a student should have obtained at least a II.1 in History and Philosophy in Part II of the Natural Sciences Tripos.

Students who have not taken History and Philosophy of Science in Part II of the Natural Sciences Tripos will be considered on a case-by-case basis. These students should have obtained at least a high II.1 overall class in Part II.

Systems Biology

In order to be a candidate for honours in Systems Biology in Part III of the Natural Sciences Tripos, a student from the Natural Sciences Tripos should:

- (1) *either* (a) have obtained at least 55% in either Mathematics or Mathematical Biology in Part IA of the Natural Sciences Tripos;
 or (b) have obtained at least 55% in Mathematics in Part IB of the Natural Sciences Tripos;

and

- (2) have obtained at least a II.1 in a single-subject Part II of the Natural Sciences Tripos.

Participation by students from the Mathematical Tripos will be considered on a case-by-case basis and a II.1 in Part II is normally expected.

All subjects

In addition to the standards mentioned above, candidates should have fulfilled any subject prerequisites as outlined in the appropriate programme specification.

The application process for each subject is defined on the subject webpage together with details of any constraints on numbers or additional information that may be required.

Consideration of special cases

A student who has not met the required standard or who has not offered the required subjects as specified above, or who has not complied with the published deadline for receipt of applications, may request consideration as a special case. A request for special consideration should be forwarded by the student's Director of Studies or Tutor to the Secretary of the relevant Faculty Board, at the earliest opportunity and, at the latest, within two weeks of the results being announced. The Director of Studies or Tutor should state the reasons for requesting dispensation, confirm that the College supports the request and is able to support the student, and believes that the student will be capable of undertaking the Part III course successfully. The application must be accompanied by copies of supervision reports, and a detailed breakdown of the student's marks, year by year and subject by subject. The Committee nominated by the Faculty Board to consider special cases is not expected to consider circumstances of a nature on which the Applications Committee would normally make a judgement.

Representations regarding progression decisions are allowed for under the review procedure for examinations for undergraduate and certain other qualifications.

CLASS-LISTS, ETC.**Allowances to candidates for examinations**

Vj k'eqpv'v'j cu'dggp'tgo qxgf "cu'k'eqpv'kpu'r gtuqpcn'lphqto cvkq'r tqvgevgf "w'pf gt'j' g'F cvc'Rtqge'v'kq'p'Cex0

Approved for degrees, diplomas, and certificates

Vj k'eqpv'v'j cu'dggp'tgo qxgf "cu'k'eqpv'kpu'r gtuqpcn'lphqto cvkq'r tqvgevgf "w'pf gt'j' g'F cvc'Rtqge'v'kq'p'Cex0

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GRACES

Graces submitted to the Regent House on 28 November 2012

The Council submits the following Graces to the Regent House. Grace 1 will be subject to approval by ballot according to the timetable set out in the Council's Notice (see p. 149). Graces 2 and 3, unless they are withdrawn or a ballot is requested in accordance with the regulations for Graces of the Regent House (*Statutes and Ordinances*, p. 107), will be deemed to have been approved at 4 p.m. on Friday, 7 December 2012.

- 1.** That authority be given to proceed with the development of a first phase of development at North West Cambridge as described in the Report of the Council, dated 22 October 2012, seeking authority to commence development of University land at North West Cambridge (*Reporter*, 6282, 2012–13, p. 59).
- 2.** That the recommendations in paragraph 6 of the Report of the General Board, dated 31 October 2012, on the establishment of a Professorship of Experimental Psychology (*Reporter*, 6284, 2012–13, p. 116) be approved.
- 3.** That the recommendations in paragraph 5 of the Report of the General Board, dated 5 November 2012, on the establishment of a Readership in Comparative Oncology and Genetics (*Reporter*, 6284, 2012–13, p. 116) be approved.

ACTA

Approval of the Graces submitted to the Regent House on 14 November 2012

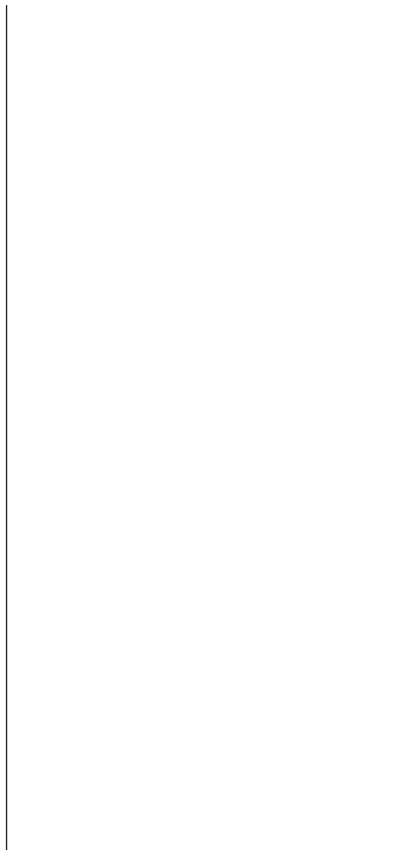
The Graces submitted to the Regent House on 14 November 2012 (*Reporter*, 6285, 2012–13, p. 124) were approved at 4 p.m. on Friday, 23 November 2012.

Congregation of the Regent House on 24 November 2012

Richard Keith Taplin of Downing College was admitted to the office of Pro-Proctor for the remainder of the academical year 2012–13 in the place of Richard James Stibbs of Downing College.

The following degrees were conferred:

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REPORT OF DISCUSSION

Tuesday, 20 November 2012

A Discussion was held in the Senate-House. Pro-Vice-Chancellor Dr Jennifer Barnes was presiding, with the Registrar's Deputy, the Senior Pro-Proctor, the Junior Pro-Proctor, and twenty-seven other persons present.

The following Reports were discussed:

Report of the Review Panel, dated 10 October 2012, to the Council and the General Board of the Review of the University's IT infrastructure and support (Reporter, 6282, 2012–13, p. 57).

Professor H. A. CHASE (Member of the IT Review Panel, School of Technology, and Magdalene College):

Deputy Vice-Chancellor, the Council and General Board have recently agreed the publication of the draft report of the IT Review Panel, for consultation. As a member of that panel, I am here today to explain its approach, and key recommendations.

This is an important review. Chaired by Professor Keith Burnett, the Vice-Chancellor of the University of Sheffield, it has been at work throughout the academical year 2011–12, and the report is now open for consultation across the University during November. The Panel will then reconvene and adjust the report in the light of the comments it has received, before it is resubmitted to the Council and General Board next term.

I will start by explaining what has driven the review. We spend over £40 million per year on IT, but it is not clear that we are getting the best possible service for users, supporting research, teaching, and administration from that investment. Questions we have addressed include: Are our IT services commensurate with our status as a world-leading University? Do we make the best of the talents of our IT staff?

I should also emphasize that this review is strategic. It is not a detailed review of every aspect of IT provision across the University. We were not mandated to review IT provision within Colleges, although we have received some College-focused inputs, and we have kept the needs of Colleges in mind when making our recommendations. We are not, generally, proposing specific changes to the current service provision, on which many in the Collegiate University depend. The panel had neither the resources nor the detailed expertise to do that. We have, however, concentrated on structures, on governance and culture. The overall aim is not to save money, but to make sure that the IT systems in the University deliver what users need.

The Panel found that IT in Cambridge has many strengths. Key central services, such as the network, email, JANET and Raven operate smoothly. We benefit from the services of many highly skilled and dedicated IT staff. We have a system of local responsibility, in Faculties and Departments, which supports specialist local needs, and allows for innovation. Our information systems do meet our critical needs, and there have been improvements in the service they offer to Departments. In research computing, the High Performance Computing Service and many other areas, deliver a first-class service.

But alongside these strengths there are challenges. The Information Strategy and Services Syndicate (ISSS) is not empowered to develop and deliver an effective overall strategy that meets the needs of users. The central organizations (the University Computing Service (UCS)

and the Management Information Services Division (MISD) of the Unified Administrative Service) have many strengths, but it is not always clear how the key decisions about which services to deliver correspond to the needs of users. The system of Departmental and Faculty responsibility for provision of generic services means that work is duplicated and standards can vary. In smaller institutions IT staff in small teams, of sometimes just one person, are under great pressure to manage all elements of the provision in their institution. The result is a lack of time for training, strategic planning, and even leave. High-level research computing lacks a clear central focus and the strategic oversight to ensure that the needs of all users across the University are met. Information systems do not always meet the needs of users in Departments, nor are they always easy to use.

So the Panel has developed some key principles, which have driven its recommendations, and which, if the report is accepted, should steer their implementation.

The first is that we need effective governance of IT, to ensure that we have a clear strategy that will meet the needs of users, and that our expenditure on central services is prioritized accordingly. To this end, we believe that having a single clear leader for the central services is critical.

We also believe that Schools, Departments, and Institutions remain the right level at which to take many decisions about provision; that allows for specialist local needs to be met, such as the role of computing in teaching and research.

We need to ensure that high standards of service are met across the whole University, in an era of increasing global competition. We must make sure we attract, recruit and retain the very best IT staff. Finally, IT services need to be designed with consideration of their carbon impact.

With these principles in mind, our key recommendations are:

- ISSS should be replaced by a new Information Services and Systems Committee (ISSC) to hold full budgetary responsibility for all central IT spend, and to better represent the needs of users. There will need to be a well designed structure of sub-committees to support this new body, and to ensure effective input from users and those with technical expertise. Many of the responses to the consultation have mentioned this, and we will give it more thought.
- UCS and MISD should merge under an Information Services and Systems Director, to create an organization well placed to deliver the strategy agreed by the new ISSC. The details of the merger will need to be worked out by an implementation team, if these recommendations are accepted, but it is not intended that the merged organization is part of the Unified Administrative Service.
- Schools should retain the ultimate responsibility for delivery of services at a local level. However, it should be made easier simply for them to buy in high quality standard services from the central organization should they so wish. There should be agreed minimum standards of provision.
- Career structures and employment arrangements for all IT staff should be reformed to promote greater mobility of, and opportunities for, individuals, and greater flexibility of IT teams.
- The oversight of large-scale high performance computing should become a University responsibility.
- Information systems need to be more closely focused on user needs.

This is inevitably a short summary of what is a substantial report. I commend it to the Regent House and other members of the University, and would encourage them to consider it and respond to the consultation. We have received constructive and thoughtful responses so far, both written, and in two open discussion meetings. The consultation remains open for written responses until the end of the month; please email the Review Secretary, Jim Bellingham, at jrb13@cam.ac.uk or participate in the online forum.

Mr R. J. STIBBS (Senior Pro-Proctor, University Computing Service, and Downing College):

Deputy Vice-Chancellor, Richard Stibbs, Senior Pro-Proctor, President of Downing College, and Senior Computer Officer, University Computing Service (UCS).

At the end of this academical year, I retire from the Computing Service after 40 years of service, starting in 1972. I had previously taken the Diploma in Numerical Analysis and Automatic Computation in the Maths Lab (the precursor of the Computer Laboratory) and had a weekly session as a Programming Adviser from 1968–1972 in the Maths Lab. This is therefore something of a valedictory speech.

Change is certainly coming to the Computing Service, whatever the outcome of the IT Review. The refurbishment of the Arup Building on the New Museums Site demands relocation of the bulk of the Computing Service, with the dispersion of servers to temporary sites until the new Data Centre is completed – and we expect the staff to move to the Roger Needham building at West Cambridge where there is the possibility of co-location with the staff of the Management Information Services Division (MISD), which will naturally help with UCS/MISD cooperation.

Turning to the Review itself, I wish to concentrate on what I see as the two aspects of it which will benefit from a change of emphasis. The first is in a better appreciation of the cultural differences between MISD and the UCS, and the second on the need for a clearer governance structure than that outlined in the report.

MISD is an essential part of the Unified Administrative Service (UAS). Its expertise is in running large commercial systems on which the University depends: Payroll, HR, Finance, Student Records, and tightly managed Desktop Services for administrative use. The management and running of these systems demand skills that are in common with those needed in commerce and industry, and the staffing of MISD correctly reflects this. It is evident that where such systems are closer to the industrial norm, the more successful they have been. We hear of no problems with the Payroll system. Where MISD has, not surprisingly, encountered the most problems is where the commercial model fails to fit with University realities. So we have seen that CamSIS (Cambridge Student Information System) finds it difficult to cope with College needs, and CUFS (the University Finance System) has had similar difficulties with Research Grant administration. Coping with such misfits has required a substantial growth in resources in MISD over the last ten years. MISD's aim has been and should be to reach best practice as compared with the best commercial companies.

The Computing Service's very different aspiration has always been and still is to be amongst the best academic Computing Services in the world, supporting the Collegiate University's core activities of research, teaching, and learning. In addition, for historical reasons, we have supported some administrative functions outside the UAS.

The underlying philosophy has been to provide enabling technologies to allow researchers as few constraints as possible in their own IT developments.

At the time when the Computing Service became a separate entity within the Computer Laboratory in 1972, major additional government funding allowed an expansion of staff of the Service, and that expansion consisted overwhelmingly of post-docs from the University, which meant that the staff were imbued with knowledge of what researchers expected and needed from the Service. These close links with research and teaching have continued. Many staff have supervised at undergraduate and postgraduate level, many have given lectures in other faculties, many have extensive academic publications, and we have always had Fellows of the Colleges on the staff. In addition, we have continued to be very active in University governance.

As an example of the important of these close connections with the Departments and the Colleges, I can cite Project Granta (the project to lay 33 km of ducting and fibre-optic cables under Cambridge, undertaken in the early 1990s). This needed political will and enthusiasm right across the University and the Colleges (as well as College money), and in my view, was only successful because of the closeness of the Service to the academic community. History repeated itself with the VOIP telephone project which was successful because of close cooperation utilizing existing links between the Service and Computer Officers in Departments and Colleges.

I would argue therefore for closer cooperation between the Computing Service and MISD, and also for co-location, but would urge the University to reject a full merger, which would put at risk the close links between the academic community and the Computing Service.

Turning to governance. The corollary to the cultural argument is that the governance of the Computing Service must be firmly in the hands of our academic leaders and not our administrative leaders. Responsibility for a vital part of what makes us a world-class University must lie with the Vice-Chancellor and the Pro-Vice-Chancellors with direct management lines through an academically dominated strategic committee.

Dr I. J. LEWIS (Director, University Computing Service, and Girton College):

Deputy Vice-Chancellor, there is much to commend in the report of the IT Review Panel, in particular the emphasis on the requirement for excellent administrative tools in support of those engaged in teaching and research, and the desire to provide more effective career development and mobility for those staff across the University providing IT support.

However, hidden in the report is a proposal for a more centrally-managed organizational structure for IT which is not clearly explained, and it is unclear how this conclusion relates to the objectives expressed.

Our current IT structure has the University Computing Service (UCS) providing common infrastructure services across the Collegiate University, reporting to the academic-led Information Strategy and Services Syndicate (ISSS), while administrative IT systems are provided by the Management Information Services Division (MISD) of the Unified Administrative Service, with line management to the Registry. The substantive recommendations of the report include the merging of UCS and MISD with line management of the combined whole to the Registry, and committee oversight provided by a new committee chaired

by the Senior Pro-Vice-Chancellor (PVC) for Planning and Resources with a similar membership to the existing Planning and Resources Committee.

The structure and oversight of our IT provision is of critical importance to the Collegiate University, and we should be wary of assuming the creation of a larger centralized organization is necessarily of benefit. Large central organizations tend to emphasize the importance of doing large central things. The University Computing Service has a strong track record in the provision of high-performing, robust and flexible network, email, and desktop services to the Collegiate University. It is the flexibility that is great about our services, and flexibility is not a common currency in large-scale IT services provision. The dedication of UCS staff to providing services meeting those needs of world-class teaching and research across Collegiate Cambridge has been supported by the independence, enshrined in Ordinances, of the UCS from the University central administration.

The review has a number of areas of concern that have been communicated via the Information Strategy and Services Syndicate. The Colleges were 'out of scope' for the review – this does not necessarily impact the characteristic of, for example, the email delivered to the Colleges, but it is important to understand that the infrastructure services, particularly the fibre, wired and wireless networks, are critically dependent upon a symmetrical and seamless set of relationships across Collegiate Cambridge. The cultures of the UCS and MISD really are different, driven by the differences in environment and role, and we need to be considered and careful in that regard so as not to end up with the worst of both. Administrative line-management of a merged UCS and MISD creates an immediate conflict of interest with the allocation of those combined resources to administrative requirements, an issue with which Cambridge committees are not well equipped to deal.

The report proposes the creation of a new committee, the Information Services and Systems Committee, removing the existing Information Strategy and Services Syndicate from Ordinances. The key difference is the membership of the former would be *ex-officio* Chairs of the Schools, with the PVC for Planning and Resources in the Chair, while membership of the existing Syndicate allows for more flexible representation from the Schools and Colleges such that academic colleagues with a real interest and involvement in the area can be sought and appointed. The new committee would be given budgetary control over the spending of the UCS and MISD. It seems to me that an obvious improvement would be to give the existing Syndicate budgetary control over the spending of the UCS and MISD, and not enter the labyrinthine corridors involved in the creation of the ISSC and the numerous sub-committees that will inevitably be spawned.

To conclude, the report highlights a large number of opportunities for the improvement in IT services in the University, the members of the Review Panel should be commended for their commitment and effort, and we should vigorously pursue the objectives highlighted. The structural recommendations, leading to increased administrative oversight, do not seem to flow from the objectives identified and risk Cambridge moving backwards rather than forwards.

Dr R. CHARLES (University Computing Service, and Newnham College):

Deputy Vice-Chancellor, my name is Ruth Charles. I am the User Policy and Account Manager at the University

Computing Service (UCS). I am also a Bye-Fellow of Newnham, where I am a member of the College IT committee. I cut my teeth as an undergraduate on computing in Cambridge. I was one of my College's first computer officers, when such roles were voluntarily filled by competent students. That early experience provided a set of transferable skills that enabled me to work in the IT industry. After a decade in industry, I returned to UCS to take up my current post.

In January 2011, the Principal Assistant Registry gave a presentation to computer officers across the University on the topic of risk management, emergency and continuity planning. This highlighted 'loss of IT' as the second highest operational risk to the University, the only risk deemed more important was 'loss of staff'. There can be no doubt that IT plays a critical part in the success of our University – this is why it appears under 'Key Infrastructure' on the University's Key Risk Register. The successful delivery of IT is something that I am sure is very much of interest to our Vice-Chancellor. It is in this context that I make my comments.

I welcome many of the recommendations of this report. In particular, I welcome the recommendation for the creation of the Information Services and Systems Committee (ISSC), a body with budgetary control, and I welcome the proposed appointment of a single Director responsible for central IT provision within the Collegiate University. These are both excellent ideas that are long overdue. An individual of great talent and ability will be needed for such a crucial and high-level appointment, which I anticipate will be made at a similar level to that of the Pro-Vice-Chancellors if it is to reflect the strategic importance of this role to the University.

As one might expect, there are some devils in the detail of the report, and I will talk about two of them. At the consultation meeting on 6 November, I expressed my concern about the absence of a leading strategic role for the new Director. This appointment must secure an individual of the highest calibre, with considerable and wide-ranging experience of IT who will be accustomed to operating at a very senior level in any organization, and in particular to formulating and delivering its strategy.

Paragraph 61 of the report makes it clear that the new Director will not be a member of the proposed ISSC. This committee will have the responsibility of developing and implementing a strategy for information services and systems across the University (paragraphs 57–67, and recommendation B1). The new Director will be in attendance. This follows a similar pattern to the current Information Strategy and Services Syndicate (ISSS) in which the Registry, the University Librarian and the Directors of UCS, MISD and the Finance Division have the right to attend.

This current state of affairs is something the Panel highlights as unsatisfactory, in particular for the Registry, whose responsibilities depend critically on many of the IT services provided (paragraph 58). So it is proposed that both the Registry and the University Librarian become members of the ISSC (paragraph 61). Yet the new Director, who will be accountable to the Chair of the ISSC for the delivery of its strategy, plans, and decisions will remain in attendance and not be a member. Does the Council agree that the new Director, an experienced IT professional and strategist, must have an equal voice in the creation of any strategy that they will lead and implement?

My own view is that the new Director should be an *ex-officio* member of the new ISSC. Similarly, the reporting and management lines for the new Director will be a determinant factor in the success of this new role. Surely

the line management should fall on the academic rather than the administrative side to ensure that the needs of the University are fully met? My own view is that given the seniority of this post, the line manager of the new Director should be the Vice-Chancellor himself, and not the Registrar (paragraph 83).

There is another problem with the proposed make-up of the ISSC, and that is one of balance. Another point made in the consultation of 6 November, is that a key objective of the IT review is to improve IT provision and delivery for our users. This is clearly reflected in the report's recommendation A6: 'The governance and organisation of information services and systems should be driven by a strategy that is based on a clear understanding of user needs'.

However, the terms of reference for the review ruled the Colleges out of scope. The current proposal is that the Colleges will have a single representative on the new ISSC, and that is the sum total of their voice.

It is clear that the Review Panel stayed within its remit in this regard. However, in doing so the needs and requirements of the Colleges as institutional consumers of central IT systems and services are omitted, and the needs of College-based users are forgotten. I raised this in the consultation meeting, and I make no apology for raising it again. This is a significant omission that distorts the evidence considered by the Panel, and inevitably impacts on its recommendations.

I did not have exact figures at the consultation, and estimated that perhaps a third of our users were college-based. As the User Policy and Account Manager at UCS, my job is to ensure that access to UCS services are provided to all who are entitled to use our systems. I have now produced accurate figures, which I hope will place my concerns about the omission of the Colleges and their users' needs in context.

Today, there are 47,842 active users of UCS systems. Access to UCS resources is provided equally wherever possible to all University and College staff, students and accredited academic visitors in both the Colleges and University institutions. The volume of accounts we provide is an order of magnitude greater than the ~1,200 users of the MISD-managed desktop, or the ~2,200 Clinical School Computing Service users, both mentioned in the draft report. Of these 47,842 people we know that 33,941 are members of a College. To be fair, for some people that affiliation comes solely by virtue of matriculation many years ago, with no active ongoing involvement with their undergraduate or postgraduate College. So I have looked at how many people have both a college affiliation and use that as their correspondence address. I believe this provides an accurate estimate of the number of College-based users across the Collegiate University. It is 21,037 people or 44% of our users.

By excluding the Colleges, 44% of our users fall outside the scope of this review. The Review Panel has been hamstrung from the outset, and can only deliver a tunnel vision for future IT provision across the University. In its current form, this review neither fully addresses nor attempts to meet the needs of our Collegiate University. There is a real danger that if the draft report progresses in its current form it will have a disproportionately negative impact upon subject areas in the Arts and Humanities, where a significant proportion of both teaching and research is carried out by CTOs – College-based users who make substantial contributions to our teaching and our research.

Access to UCS resources is currently provided equally across the Collegiate University, but if we move forward with the report in its current form some of our users will become more equal than others.

Mr P. MAZUMDAR (University Computing Service) (read by Dr R. Charles):

Deputy Vice-Chancellor, I am currently the acting Chair of a group within the University Computing Service (UCS) that aims to disseminate security matters across teams within the Computing Service. We discussed the IT review at our most recent meeting, and felt many of its aims were commendable but that the outworking was focused in specific areas, leaving others uncovered. There were two issues of particular concern.

The establishing of a minimum level of desktop service is a welcome development; regrettably, the same standardization has not been applied to the infrastructure of networks and servers. The media have recently reported on a number of breaches of university IT systems; these would have been mitigated had all institutions been expected to maintain a minimum standard of infrastructure.

Second, for security to work well, it needs to be built into the strategy and structure of an IT service; when bolted on as a form of last-minute operational compliance, it can feel more restrictive than protective. It should either be made part of the remit of the ISSC or a separate information security group established. In particular, up until now we have benefitted from having a single point of contact with law enforcement agencies who is appropriately trained, skilled and familiar with their requests. It would be unfortunate were we to lose such a conduit for external bodies.

This is an important and high-profile issue. As a result of this external liaison, members of the UCS are potential witnesses in a major cybercrime trial involving extradition and governmental-level targets, and are called periodically by the Coroner's Office in suicide and murder investigations. These would be impeded by not having such a clear external contact for legal issues.

Despite Cambridge being a high-profile target for electronic attacks, we currently have a good record for controlling them. It would be unfortunate were that to be lost by the review not adequately covering the issue of information security.

Mr N. M. MACLAREN (University Computing Service):

Deputy Vice-Chancellor, this report surprised many people because of its incomplete and inaccurate descriptions of current IT services and the University's requirements. An inspection of Annex 3 clarifies why, and shows that its very first paragraph is being most economical with the truth. Only 24 people were spoken to, of which only one was a researcher below the level of a Reader, and only three were non-managerial IT staff (from the Management Information Services Division (MISD), Engineering and English). Given the major changes this report proposes to the support of research and to the University Computing Service (UCS), that is not what one would expect from leading academics.

It is infeasible to describe those omissions and inaccuracies in 15 minutes, so I shall address just the aspect of support for the University's actual research. This aspect was almost completely omitted from the report, and it is likely that the effect will be even more neglect of this area.

At the second open meeting, the Pro-Vice-Chancellor stated that the current separation of MISD and UCS causes a poor service to the University by failing to provide proper support for administrative computing in departments. He seemed surprised when told that this was not the responsibility of the UCS, and responded by stating that it should be. That is a reasonable position, and I shall not argue against it. However, if the UCS takes on that workload, something else will have to go.

By support for actual research, I am referring to when researchers need to learn academic disciplines that are not covered by their School or Department, or to learn comparably advanced skills; it also covers when they encounter an advanced IT-related problem that their Department can neither bypass nor resolve. Examples of these include applied mathematics, statistics, numerical analysis, algorithmics, and more. At the more basic level, such disciplines and skills need teaching to staff and graduate students, sometimes as 'transferable skills' and sometimes as part of M.Phil. or Ph.D. courses. In extreme cases, such advice verges on collaboration, such as when it is necessary to develop a new variant of an algorithm, or even invent a completely new algorithm.

I have been doing these tasks since 1972, at least as part of my role, but there are dozens of IT and other staff who also provide them, often without receiving any credit for doing so. What does the report say about this area? Nothing. It is not because the Panel did not receive any information, because they did. Many of us have also made Remarks on this before, and pointed out that the University's provision for this area is notoriously inadequate. Many successive Reports, such as the belatedly published one on teaching and learning support services, have completely ignored the issue, as does this one.

The proposals for levels of service (paragraph 45) say nothing about access to appropriately expert advice, or even access to appropriate courses for the skills they need to use in their research, and section G (Research Computing) is all about the provision of systems. One of the things that all forward-looking universities (including Cambridge) learnt in the 1960s and 1970s was that provision is not enough, and access to advice and assistance on the use of systems is equally important. We really should not plan to regress back to the 1950s!

How would such support be handled under this proposal? Paragraph 90 and recommendation D1 imply that the larger Departments would handle it themselves, and others might use a central service. Paragraph 132 implies that Ph.D. students or post-doctoral workers could provide it, but is it realistic to expect a professor or principal investigator to consult a student on a problem he cannot resolve? The problem here is that Cambridge's speciality is leading-edge research, and that leads to questions that are themselves leading-edge.

The UCS has always attempted to provide this sort of support, even when officially discouraged from doing so, and usually without any resources to take on the extra workload. Recommendations D1 and F2 imply that Schools and Departments will decide who gets their share of the resources. Many of them will want to keep it for their in-house support, so it would necessarily mean a cut-back in central provision. Experience here and elsewhere is that charging for such teaching and advice simply does not work.

What will happen to this area when the UCS is merged with MISD? Will this survive? What will be the impact on the University's research? What are the effects of not being able to get such help?

The researcher may waste a huge amount of time, may not be able to solve the problem at all, or may use an inferior method, which often leads to wrong answers. None are conducive to maintaining a lead in research. I sincerely hope that the plan is not to buy-in leading-edge teaching and advice! Even larger Departments will suffer. But the real impact will be on the smaller ones, and those with only group-level IT service organization. To alleviate the harmful effects on the University's research, the University needs to do two things:

- (i) To provide closer integration between the UCS and the IT staff in Departments, as recommended in the Swinnerton-Dyer report; and
- (ii) To take action to provide proper academic-level cross-disciplinary training, teaching and advice.

Kicking those into the long grass yet again will not work; this is the University's last chance to build on our current mechanisms and even staff; if it is delayed, those will disappear and the University will sooner or later have to rebuild them from scratch.

Mr D. J. GOODE (Faculty of Divinity and Wolfson College): Deputy Vice-Chancellor, I am speaking today on behalf of the Computer Officers in the School of the Arts and Humanities.

The School's Computer Officers met this morning for one of our regular IT Coordination Group meetings, and thought we would take the opportunity of this Discussion to make a few brief remarks about the IT review under consideration today.

Much of the review is taken up with the proposed merger of the University Computing Service with the Management Information Services Division. We do not have a particular view to express today on this proposed merger, but we did note that it takes up a substantial part of the review.

We also noted that the Panel which produced the review is drawn predominantly from the Science, Technology, Engineering, and Mathematics (STEM) subjects. This, of course, is unsurprising as the composition of the Panel will 'follow the money', and does not help to allay a nagging fear that the outcomes of the review may not suit the needs of the Arts and Humanities.

Centrally provided services are mentioned as a way in which a consistent service can be offered to students and staff. The experience of the Computer Officers in the School of the Arts and Humanities is that these sorts of things do not necessarily work well in our School. For example, the Managed Cluster Service (MCS) is used in only two of our Faculties and Departments. Two other Faculties have had MCS in the past and withdrawn from it, and the other institutions have considered it but never implemented it.

Of course, there are various reasons for this, some technical, some financial, some practical. But it is no coincidence, we feel, that such a centrally provided service may not suit our needs, and an even wider-ranging and larger-scale centrally provided service may suit them even less.

It is the impression of the Computer Officers in this School that we are generally underfunded, and the idea of seeing major investment going into more and more centrally provided services and inevitably away from specialised services in what would become 'outlying' institutions worries us.

Local expertise is essential in the Arts and Humanities. We have many specialized needs that cannot be met with a

'one size fits all' centrally provided service, but require the knowledge each of us has of our institutions and subject areas. The centralization of library services came to mind, with the potential loss of subject knowledge that may entail.

The review recommends the appointment of IT Coordinators in Schools. In fact, one of the items on the agenda for this morning's meeting was to review the first draft of the PD33 for the new role in the School of the Arts and Humanities, a role we identified as necessary at a previous meeting. We are pleased to see this recommendation.

Though a relatively new thing for us, the School IT Coordinating Group meetings have been very productive, and the fact that I am standing here today, speaking on behalf of my colleagues in the School, is living proof of the value of these sorts of meetings, to which much value will be added by the appointment of a good IT Coordinator.

To finish, I will reiterate that the Arts and Humanities comprises generally smaller, more specialised institutions than in the STEM subjects, where large-scale centrally provided services are not always the appropriate solution to those needs; and we would like to see the outcomes of the review include the recognition that locally-based flexibility, subject knowledge, and effective service are not just desirable in the provision of IT in the Arts and Humanities, but essential.

Mr J. WARBRICK (University Computing Service):

Deputy Vice-Chancellor, my name is Jon Warbrick, I am a Computer Officer in the University Computing Service (UCS), and a former member of the Information Strategy and Services Syndicate (ISSS). I am also a former College computer manager.

I believe that the review committee has correctly identified many of the issues facing the University in managing its IT infrastructure and support services. I think that some, though not all, of the criticisms of the current situation are justified, and I agree that the University as a whole probably isn't getting the best value it could for the money it is spending.

The review committee is to be congratulated for producing a set of proposals for debate. It seems to me that these proposals might indeed work, and I agree with many of them. However I am concerned that there is little evidence that they will work, and quite a significant risk that they won't. With IT systems representing one of the most significant corporate risks to the University, it is unfortunate that the review fails to address this.

The devil is in the detail – the detail of what's in the report (and significantly what's not in the report), what Council eventually enacts, and the most difficult issue of all: what happens as a result. It is instructive to look back at the proposals in previous similar reports by Professor Swinnerton-Dyer, and by Professors Shattock and Finkelstein, and to compare those proposals with what was actually achieved.

I would like to make two specific points in this regard.

Firstly, much of the thrust of the report is about centralizing the strategic management of information services and strategy, by replacing the existing Information Strategy and Services Syndicate with an Information Services and Systems Committee (ISSC), appointing an Information Services and Systems Director, and merging the UCS and the Management Information Services Division (MISD). But even after these changes, which are not without their own risks, most IT provision and spending

will remain in Schools, Faculties and Departments, and outside the ISSC's area of responsibility. Worse, it seems to me that there is a danger of one or more non-ISSC-supervised organizations expanding to fill the vacuum caused by merging the UCS into MISD, resulting in a new, separate academic computing service independent of the ISSC. Were this to happen it's not clear what we would have gained by the entire process.

I note in passing that four reviews over the last 20 years have all proposed strengthening the role of the equivalent to the ISSC and none of the previous three seem to have achieved it.

Secondly, the proposed IT Services organization would have a 'Director' reporting to the Registry, be responsible to a committee, and work closely with an identified Pro-Vice-Chancellor. In this respect it will be very similar in all but name to many divisions of the Unified Administrative Service (UAS). Paragraph 86 suggests that the new organization should be outside the UAS, but this thought isn't reflected in the formal recommendations. It seems to me that the proposals as they stand will inevitably bias the new organization towards the administrative needs of the University, potentially at the expense of support for the University's core business of teaching and research.

Mr M. B. BECKLES (University Computing Service):

Deputy Vice-Chancellor, my name is Bruce Beckles and I am a member of the University Computing Service (UCS), and the future of the University Computing Service is one of the matters considered by the report under discussion. I am also a member of the Board of Scrutiny, and although I am not speaking on their behalf, I am speaking as a member of the Board.

My first concern with this report has to do with the quality of the data on which it bases its conclusions. I am aware that the Review Panel received submissions from a number of people across the University, which is, of course, a good thing. Unfortunately, in my view, it is also one of the most significant problems with the report. Some of the contributing individuals, probably quite unintentionally, will have said things to the Panel which are misleading, or possibly even incorrect. I see nothing in the report to suggest that the Panel has engaged in any independent verification of the information provided to it. Will the Council tell us what independent verification was undertaken, and by whom?

I am also concerned that the report fails to quantify the risks associated with its recommendations. As we know, IT is the second highest operational risk the University faces, and so a major overhaul of the University's IT arrangements is clearly adding to this risk significantly. The Board of Scrutiny is, in general, concerned whenever the University engages in activities which significantly increase the risk to which we are exposed. This report is therefore incomplete so long as it fails to quantify the risks inherent in its recommendations. The report contains a lot of recommendations, but very little detail, which makes the situation with regard to risk worse.

One of the main recommendations of the report is the merger of the UCS and Management Information Services Division (MISD), and included in this is the idea of co-location of the relevant parts of these organizations. However, the UCS has been told that it will need to vacate its current premises in the very near future, and it is currently being suggested that when we do so, we co-locate with MISD. This means that co-location with MISD may well happen in advance of the final version of this

report, and of any Graces associated with it. This is clearly wrong, if the report is, as it appears, concerned with co-location, then co-location clearly must not occur until the University as a whole has made a decision about the report.

It is also proposed that the new merged IT organization should ultimately come under the purview of the Registry. This seems perverse, given that the UCS is larger than MISD,¹ provides services to – and support for – an order of magnitude more users than MISD,² and that the UCS is primarily concerned with services and support for the Schools and the Colleges, rather than the Unified Administrative Service (UAS). If the Registry is in charge of the new merged organization, then inevitably its focus will be on administrative computing as opposed to the supporting of the academic aims of the University which, after all, shape its core business.

There has been some talk about whether the replacement for the Information Strategy and Services Syndicate (ISSS) should be a Syndicate or a Committee. I have been unable to discover any definitive distinction between these classes of organizational body. However, I observe that Syndicates always arise from our Statutes and Ordinances (S&O), whereas Committees do not necessarily do so. It seems to me that it is vital that the replacement for the ISSS should be a body defined in S&O, although I am agnostic as to what it is called.

The report correctly identifies weaknesses of the existing ISSS. A significant cause of these weaknesses is that other senior University committees – in particular, the Planning and Resources Committee (PRC) – make decisions without reference to the ISSS. Thus, the ISSS might, for instance, decide not to pursue a particular course of action, but if some other body in the University applies to the PRC for funds to follow exactly that course of action, the PRC may well provide those funds. There is nothing in the report that would prevent this happening with the proposed replacement for the ISSS. Unless and until this issue is addressed, any replacement for the ISSS will remain ineffective in dictating overall University IT strategy. I suggest that the final version of the report recommends that the PRC and other significant University committees are required, under Statute or Ordinance, to consult with the ISSS, or its replacement, whenever they consider any matter which involves IT. It should be remembered that matters such as the building of machine-rooms fundamentally involve IT, and are not simply minor building works.

A number of the report's recommendations appear reasonable at first glance, but when one considers the lack of detail, these recommendations could be anything from hopelessly ineffective to utterly disastrous. For example, recommendation D1 makes reference to some minimum standard, but we are not given any detail on what those minimum standards might be, or how they might be determined. For a standard to be effective, it needs to be at least credible, fit-for-purpose, measurable and enforceable.

Leaving aside the issues of credibility and fitness for purpose as things which a report at this level might reasonably not concern itself with, we are left with a gaping void with regard to the issues of measuring and enforcing the minimum standard. If the standards are not routinely monitored by an independent body, then we cannot tell whether they are being met; if the standards are not enforced, no-one will meet them. By failing to address these issues, recommendation D1 is effectively meaningless. Similar comments could be made about other recommendations in the report.

The report also proposes that existing IT provision be maintained and that even more be provided. However it

fails to identify any new resources for these purposes. How is this to be achieved? The report fails to say.

Thus, whilst I agree that central IT in the University needs to continue to be developed so that it can continue to meet the University's needs as they evolve and expand, it does not seem to me that this report actually helps with this. I think that the report needs to be carefully considered in light of the issues raised in this Discussion by myself and others. I look forward to a revised report in the near future.

¹ According to the Report on the Review of the Strategy, Plans and Budget of the Unified Administrative Service (UAS) July 2011, in 2010–11 MISD had 90.3 full time equivalent (FTE) staff (*Reporter*, 6237, 2011–12, p. 33; see Annex 2 of the aforementioned Report on the UAS Review). According to the UCS Annual Report 2010-11, in 2010-11 the UCS had at least 101.1 full-time equivalent staff (see Table 1 of the UCS Annual Report's Statistical Appendix: <http://www.ucs.cam.ac.uk/about-us/annual-report/ucs-annrep-appendix-1011.pdf>).

² For details, see my colleague Dr Ruth Charles's contribution to this Discussion.

Mr J. P. KING (University Computing Service):

Deputy Vice-Chancellor, my name is Julian King, I am a member of the University Computing Service (UCS). I admit that I am a newcomer to the University having been here for less than 14 years. I am also a member of the Information Strategy and Services Syndicate (ISSS) and of the IT Purchasing Group.

I would like to start by saying that there is much to be positive about with regards to the report on the review of IT infrastructure and support. I think that the general direction proposed is the correct one. I think that one result will be a reduction in political infighting between the current central organisations. However, if all there was to say was positive then I, and many others, wouldn't be here to make comments.

I have read this report many times. I have attended several meetings contemplating it. I have heard views from both sides. Many of the criticisms have had the response that the critic is misinterpreting the report. I am pleased to say that I am largely convinced that this is the case. However, this belief doesn't mean that I can forgive the report for this very failure to communicate its intent. If the conclusions and recommendations from this review are to be voted upon, then the report must be tightened up and ambiguity removed before there is a Grace. A justification of why it was appropriate to ignore teaching, training, and the Colleges must be made, hopefully not relying on the effectiveness of the Teaching and Learning Services Steering Group which meets incredibly infrequently. If the title 'Information Services and Systems Director' is intended as a placeholder then this should be made clear, or better yet replaced with a sane title, say 'Chief Information Officer' (CIO). If the intent is not to tie the hands of the incoming CIO and the Information Services and Systems Committee, then the concrete organizational proposals should be struck from the report. If the intention is for lists of services to be considered merely a sample, then this must be made crystal clear. If the belief is that the focus for IT support within the University should be academia, then the case must be made why the Registry should be in the line management chain.

Essentially the quality of the report must improve from its current passing grade to the merit that matches the aspirations it has for the quality of IT provision within the University.

My second point may in a way be covered by my first, but I suspect may actually be a flaw in the underlying logic. The report appears to simultaneously hold two opposing views. Centralization – and the efficiencies and improved communication that come from that centralization – is good. At the same time competition with the centre is also good. Now, make no mistake, I firmly believe that there are things which are better done at the edges. For example, the centre can never hope to match the focus and responsiveness of specialist tailored support within the institution. At the same time, there are other things which firmly belong in the centre. I hope, for example, that no-one would disagree that the CUDN (Cambridge University Data Network), which, effectively carries all the Internet traffic around the University, belongs at the centre. Different people will have contrasting views on quite where the line between the centre and the periphery should be drawn. The risk that I would like to highlight is that the centre will, much like the Post Office, be obliged to offer a service to everyone at a uniform price, but with competition which then removes some of the economies of scale and the almost invisible cross-subsidies that this permits to the benefit of everyone. The result is a more expensive central service, which loses custom, resulting in a downward spiral to a situation where the University ends up paying more overall for its IT, which at the same time isn't as good as it should be. Exactly the situation that the report claims to be trying to escape.

Mr B. K. OMOTANI (University Computing Service):

Deputy Vice-Chancellor, I speak as the senior member of the Security Incident Response Team at the University Computing Service (UCS) that deals with the abuse reports involving computer systems on the Cambridge University Data Network (CUDN).

I was surprised that the IT review did not include information security as part of the remit of the proposed Information Services and Systems Committee (ISSC). A framework for the oversight of this area must be of importance for the University. Loss or exposure of personal information or sensitive research data could have serious consequences for the University. Appropriate guidance and measures to ensure compliance with any existing legislation are necessary for the functioning of the University and to protect its reputation. This must cover both the integrity of the information and the systems on which it is stored. The latter could be information systems, personal devices or even paper-based systems. Access to information required by students, researchers and administrative staff must be maintained while preventing accidental and unauthorized disclosures. The Data Protection Act 1998 has legal requirements to ensure that personal information that the University holds is both appropriate and correct. Examples of other relevant legislation include:

- the Freedom of Information Act 2000;
- the Computer Misuse Act 1990;
- the Regulation of Investigatory Powers Act 2000; and
- the Telecommunications (Lawful Business Practice) (Interception of Communications) Regulations 2000.

There is an increasing variety of data being used that is accessible using the network, and institutions will need advice and guidance about the security/legal implications, and how to respond to requests/complaints. In addition, other devices like CCTV and building management systems that may not have been designed with network security in mind are being deployed both by central bodies

and individual institutions. Appropriate measures need to be taken to ensure their integrity.

There are many resources being made available that are external to the University often referred to as being in the Cloud. They are often seen as attractive for possible financial savings or for convenience of access. Users need to be made aware of the possible consequences of using such services, e.g. for intellectual property, and possible loss of data or access to data should a service cease. Advice on the appropriate use of such resources should be provided.

The University should be aware of the data and IT systems that are being used by its institutions, and be confident that appropriate security measures are in place. This includes measures to maintain data integrity as well as avoiding accidental disclosure. While the need for backup facilities is mentioned in the IT review, the preservation of research data is not covered.

Mr R. S. HAYNES (University Computing Service):

Deputy Vice-Chancellor, my name is Ronald Haynes, a Computer Officer in the University Computing Service (UCS), former College IT Manager and former large Department Deputy IT Manager.

It is good that we have an opportunity to review IT infrastructure and support as a community. Regrettably, we seem to have missed significant sections of our community in the official considerations so far. These should have included greater representation of the unique needs of Departments and Institutes, and important input in consideration of the needs of Colleges. There should also be a better account taken of the other groups providing IT and related services and support beyond their own Department, complimenting the focus on the Management Information Services Division (MISD) and UCS. The IT review and the Information Services and Systems Committee (ISSC), which is proposed to replace the existing Information Strategy and Services Syndicate (ISSS), does not take sufficient account of the IT provision of the University Library, including CARET (Centre for Applied Research in Educational Technologies), nor of experimentally expansive groups which have begun to emerge.

When speaking of taking account, it is inevitable that this review came out of an initial effort to consider efficiency savings.¹ It is laudable that the review does not intend to pursue a reduction of costs or staff. That said, we should urgently compare our various spends on IT against comparable institutions. Prior to this review, the School of Physical Sciences held their own IT review, and out of that published a strategic plan for the School.² It is noteworthy that their plan indicates the understandable expectation of growth as it states '... as IT continues to become more pervasive and more complex, demand for support resources will continue to grow, which will mean that spending on IT will increase or quality of service will suffer unless action is taken'.³

It was also instructive to hear Dr Kirsty Allen of the Registry's Office at a seminar last year⁴ indicate that the University's business continuity exercise identified the loss of IT as the second most important risk in emergency situations, naturally after the impact of loss of staff. Business continuity, of course, is our ability to carry on our various work in the event of any loss of any resources. With both of these risks in mind, both people and IT resources, there is undoubtedly much greater scope for sharing services and direct support for personal and

professional development, e.g. assured time for participation in personal and professional development, mutual job shadowing for service resilience, cross-institutional resource planning discussion, such as virtualization and storage. These will likely necessitate greater resources to assure the reduction of risk and the growth of our essential services and support.

Extreme caution should be observed with regard to any outsourcing considerations and calculations, something about which the review hints. Apart from its being an increasingly outmoded business model, which we would do well to review and take due heed, there are groups such as the European Services Strategy Unit, which track some of the wider impact of outsourcing attempts, including contract problems and cost overruns, such as nearly £30 billion in contracts with an average cost overrun of 30.5%.⁵ One only needs to consider the long list of failed public IT projects. The flexibility required by our proper IT provision is not something which outsourcing can affordably deliver.

Many of us who specialize in the academic side of IT are rightly concerned that there is so far insufficient consideration of the essential work required for the widely varied and proper provision of teaching, learning, and research-related IT. It sends entirely the wrong signal for the proposed Director of the ISSC to be reporting to the Registry for line management. In a discussion the other week,⁶ an alternate proposal was for the Director to report to the Vice-Chancellor, and this met with much support.

While it does not yet seem obvious that we need a type of Chief Information Officer to solve our IT problems, after debate, if we are to have one it should be clear that the post and all the reorganization that would go with that post should be more inclusive and balanced with the needs of all sides of our University community, which would mean not biasing it toward the more administrative side alone.

As we take this forward, we must decide whether, metaphorically, we want to build a cathedral or maintain a bazaar (not bizarre, I should stress). Of this metaphoric model, we have a good example just nearby with the Cambridge market square next to which we have Great St Mary's church. Each area has its own function and complements the other. If we tried to combine these as one entity, we would lose the best of each. There is a well-known article and book by this title *The Cathedral and the Bazaar*⁷ and it has evolved along with the rise of open source software, especially the Linux operating system, upon which much of the University community and the internet more widely rely, whether knowingly or otherwise. The lessons learned include: 'the fact that this bazaar style seemed to work, and work well, came as a distinct shock.'⁸ We should think again about the model we are to follow and the best fit our unique structure needs.

¹ Establishment of Working Groups to consider University-wide efficiency savings; see <http://www.admin.cam.ac.uk/reporter/2009-10/weekly/6195/section1.shtml#heading2-4>.

² School of the Physical Sciences, 'Strategic Plan 2010-2014', archived at: <http://web.archive.org/web/20100613022631/http://www.physsci.cam.ac.uk/strategicplanning/plan.pdf>.

³ Op. cit.; 'Computing and IT', Section 5, part b, p. 20 (internal p. 17).

⁴ Whose business is your business continuity?, Risk management, emergency and continuity planning at Faculty/Departmental, School and University level; see <http://www.tus.csx.cam.ac.uk/techlink/workshops/seminar-jan19-2011.pdf>.

⁵ 105 public sector ICT contract failures, <http://www.european-services-strategy.org.uk/outsourcing-library/contract-and-privatisation-failures/105-public-sector-ict-contract-failures/>.

⁶ Open Meeting, 6 November, <http://www.admin.cam.ac.uk/reporter/2012-13/weekly/6282/section1.shtml#heading2-4>.

⁷ *The Cathedral and the Bazaar*; see <http://www.catb.org/~esr/writings/cathedral-bazaar/cathedral-bazaar/>.

⁸ Ibid.

Consultation paper on amendments to the Second Joint Report of the Council and the General Board on the pay and grading scheme for non-clinical staff (*Reporter*, 6283, 2012–13, p. 83).

Professor J. K. M. SANDERS (Pro-Vice-Chancellor for Institutional Affairs) (read by the Senior Pro-Vice-Chancellor):

Deputy Vice-Chancellor, I speak as Chair of the Human Resources Committee and also as Chair of the Working Group that drew up the proposals that form the basis of this consultative report.

The recruitment market for academic staff has evolved substantially since the Second Joint Report¹ was enacted in 2006. Those who have been involved in recruitment recently will be aware that we are operating in an ever-more competitive international market for the most talented staff. In order to respond to this challenge over the past few years it has been necessary to make increasing use of the market supplement mechanism. This is unsatisfactory from several perspectives, including comparability with current staff, disconnection from the published criteria, and the need for regular review. In short, this system is no longer fit for purpose. Furthermore, even using the market supplement mechanism, we are ultimately unsuccessful in recruiting many of those to whom we make an offer; a significant fraction of those failures is due to our inability to meet salary expectations or match salaries offered by our international competitors.

This consultative report is an attempt to address these issues. In the course of the working party deliberations, we also decided to propose a significant change to the University Senior Lecturer (USL) reward structure. I shall take the latter first.

The report proposes improved recognition of USLs whose teaching and/or general contributions are outstanding. This will be achieved by a two contribution point extension to the scale of stipends for the University Senior Lectureship, enabling outstanding USLs to attain the same salary level as Readers on point 63.

While recognizing that many USLs will aspire to promotion to Reader and Professor on the basis of a strong all-round record in which research plays a prominent role, we propose that USLs whose outstanding contributions are in teaching and other non-research activity should be recognized by the new contribution route.

For Grade 12, we propose an extension and revision of the salary scale to enable us to compete more effectively in recruiting and retaining staff of the highest calibre. This will be achieved by introducing an overlapping extension to Bands 1 to 4 of Grade 12 and the incorporation of the professorial minimum spine point into Band 1. Progression within and between bands will continue to require evidence of a sustained and improving contribution through the biennial Professorial Pay Review.

At present, promotion to personal professorships is to point 68 of the single spine, Band 0. Movement to Band 1 is then through a further significant promotions process. By contrast, Professors elected from outside to established chairs are almost always appointed at least into Band 1. By assimilating Band 0 into Band 1, there will still be an applications process to move upwards within Band 1; the barrier to that first move will be smaller but will remain significant.

A cap of spine point 100 for Band 4 was selected following comparison with Russell Group and US competitor salary data. Many other UK institutions do not have a published scale at these levels: they simply have secret negotiations. We feel the discipline of a published scale is preferable. The extended scale would provide greater transparency in the pay of senior staff by requiring fewer market supplements.

This approach allows us to propose the abolition of new market supplements in most cases, to be replaced by the introduction of advanced contribution supplements for academic staff and market pay for other staff.

Advanced Contribution Supplements (ACS) are payments that proleptically reward an expected future level of achievement. ACSs will be awarded in the expectation that an individual will reach a certain level of achievement in the near future. Where an ACS is awarded for retention purposes, it will be for a fixed, limited period. Individuals in receipt of an ACS may apply for promotion, contribution points or a change in band. If they are successful, the increase will be incorporated into the individual's base pay and the ACS reduced by a corresponding amount so that their overall pay remains the same. Individuals would not receive an increase in pay in real terms until their underlying base pay had fully absorbed their ACS. This would be made clear to new appointees.

Over a period this approach should reduce the differential between staff who have come in with a high salary and those who have worked their way up through the promotions system.

For senior academic-related staff we need greater flexibility to enable appointments to strategically important positions at salary rates competitive with external market conditions. The University has in the past struggled to offer competitive rates of pay to enable it to attract the best candidates to take forward important projects, and has found market supplements to be essential.

We propose that for these staff, market supplements are renamed market pay to reflect the reason why an individual's total pay is above the salary scale for their particular grade. Where market pay is used for recruitment purposes, appointments should normally be made on a fixed-term basis with a defined end point, or on an open-ended or permanent contract but with a market payment for a fixed period of time. The use of fixed-term contracts where objectively justifiable would enable the University to pay salaries appropriate to the relevant market, but also limit its longer-term financial exposure and better manage employee expectations.

It is proposed that existing market supplements are absorbed into base pay where possible.

Following the consultation period, we hope to produce a Report setting out final recommendations in the Lent Term 2013 with a view to implementation from 1 October 2013. Changes to the USL salary scale would be implemented from 1 October 2014 to provide sufficient time for amendments to be made to the Senior Academic Promotions guidance.

¹ See *Reporter*, 6002, 2004–05, p. 745.

Report of the General Board, dated 31 October 2012, on the establishment of a Professorship of Experimental Psychology (*Reporter*, 6284, 2012–13, p. 116).

No remarks were made on this Report.

Report of the General Board, dated 5 November 2012, on the establishment of a Readership in Comparative Oncology and Genetics (*Reporter*, 6284, 2012–13, p. 116).

No remarks were made on this Report.

COLLEGE NOTICES

Elections

Fitzwilliam College

Elected into a Fellowship in Class A with effect from 21 November 2012:

John Millington Munns, B.A., M.A., *Durham*, M.Phil., *Bristol*, Ph.D., *EM*

Selwyn College

The Election notice published on 14 November 2012 (*Reporter*, 6285, 2012–13, p. 130) contained an omission. The notice should have read as follows:

Elected to a Visiting Bye-Fellowship for the academical year 2012–13:

Filipe Carreira da Silva, B.A., *ISCTE*, M.Phil., *Lisbon*, Ph.D., *ED*

Vacancies

Christ's College: Non-Stipendiary Junior Research Fellowship in any subject; tenure: at least two years and not more than four years; closing date: 10 January 2013 at noon; further particulars: <http://www.christs.cam.ac.uk/college-life/vacancies>

Sackler Non-Stipendiary Research Fellowship in either Chemistry or Applied Mathematics; tenure: at least two years and not more than four years; closing date: 10 January 2013 at noon; further particulars: <http://www.christs.cam.ac.uk/college-life/vacancies>

Fitzwilliam College: Master; the Governing Body intends to elect a new Master to succeed Professor Robert Lethbridge with effect from 1 October 2013; closing date: 5 December 2012 at noon; further particulars: contact Saxton Bampfylde Ltd at <http://www.saxbam.com/jobs> (using reference KAFIA), email KAFIA@saxbam.com, or telephone (0)20 7227 0890

Pembroke College: Keith Sykes Research Fellowship in Italian Studies; tenure: from 1 October 2013; salary: £21,383–£24,049; closing date: 7 January 2013; further particulars: <http://www.pem.cam.ac.uk/the-college/job-vacancies/>

This content has been removed as it contains personal information protected under the Data Protection Act.

EXTERNAL NOTICES

Oxford Notices

Nuffield Department of Orthopaedics, Rheumatology, and Musculoskeletal Sciences: Professorship of Musculoskeletal Sciences; closing date: 28 January 2013; further particulars: http://www.ox.ac.uk/about_the_university/jobs/fp/

Jesus College: Shaw Foundation Junior Research Fellowship in Law; salary: £29,249; closing date: 21 January 2013; further particulars: <http://www.jesus.ox.ac.uk>

Merton College: Fixed-term Fellow and Tutor in Economics; salary: £35,966–£48,293; closing date: 4 January 2013; further particulars: <http://www.merton.ox.ac.uk/vacancies/index.shtml>

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