# Graduate Admission and Scholarship Application Form (GRADSAF)



This form should be completed if you wish to apply for admission as a graduate student at the University of Cambridge.

If you are, or have previously been, a graduate student at the University of Cambridge please see <a href="https://www.admin.cam.ac.uk/offices/gradstud/prospec/apply/continuation/">www.admin.cam.ac.uk/offices/gradstud/prospec/apply/continuation/</a> for information regarding the continuation process.

		Si	ECTION A: AI	I questio	ns must be	e compl	leted		
A(1) Personal detail	s								
Name (this should be your legal name)							lf you had a differe study at Cambridg		
Last (family)	Shimko	nimko			Last (family)	Ī	one of the second second	, , , , , , , , , , , , , , , , , , , ,	
First	Tyler			F	First				
Other names	Carter				Other first na	mes			
Title (Mr/Mrs/Miss/Dr etc)	Mr				Title (Mr/Mrs/Mi	ss/Dr etc)			
Date of Birth		Nationality and	d residence						
		Country of perma	anent residence	United S	States			Do you require	
DD MM Y	YYY	Nationality		United S				to study in the U	JK? No
Gender		Any second nation	onality	Not App	licable				
X Male F	emale	Country of birth	,	United S					
A(2) Contact Inform	ation								
,,									
		Ma	iling Address				Home (permane	ent) Address (if	different)
Number/street									
Town or city									
County/province/state									
Postal code									
Country									
Telephone									
	This ad	ldress is valid until	l:			I have liv	ved at this addre	ss since:	
	01	05	2015	DD/MM	/YYYY	26	01	1993	DD/MM/YYYY
Email Address								ry clearly, we will u	ise your email to application process.
A(3) Programme of	Study								
							Plane	o noto: not all ac	urana ara availabla
	Date you wish to start  Study mode (tick one only)  Please note: not all courses are available part-time – see individual course entry in								
X 01 October 201	5		Į.	X Full-T	ime	Part-Tim		nline Qualification	,
Details of your pro	gramme	of study. Consul	It the appropriate	entry in the	e Qualification	s Director	ry before complet	ing the fields in th	is section.
Course code	Progra	amme of study or	r research area		Departmer	nt		Final Award	Duration
MAM2	MPhi	I in Computation	nal Biology		Dept of A	pp Math	n & Theo Phys	MPHIL	1

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FULL NAME

#### A(4) College membership (please consult the College section of the Prospective Students area of the Board's website)

You may choose up to two Cambridge Colleges to consider your application. If you do not indicate a choice in this section, the Board of Graduate Studies will allocate a College to you. You cannot amend these choices after you have submitted your application. Should you receive a conditional offer of admission from the Board, your application will be sent to your 1st choice College and then your 2nd choice College. Should neither College offer you membership, your application will be circulated to other Colleges.

In the College Choice Form below, write "1" in the box next to your 1st choice College, and "2" in the box next to your 2nd choice College. No other choices will be taken into consideration. If you have studied at Cambridge before, please also write the name of your previous College in the 'Existing College Membership' section on the right.

College Choice Form					Existing College Membership			
Do <u>not</u> tick the boxes – you must write a number to show your order of preference.						If you are already a member of a Cambridge		
Christ's Homer		erton Queens'			College, <b>please indicate which one</b> . This is for the Board's information only, and does not constitute an application to the College.			
1 Churchill Hughe		es Hall Robinson						
Clare Jesus		St Catharine's			College			
Clare Hall	King's	St Edmund's			Name			
Corpus Christi	Lucy (	Cavendish * St John's			If you wish your application to be considered by this College, you must also name it			
Darwin	Magda	alene	Selwyn			our choi		ollege Choice
Downing	Murra	y Edwards *	Sidney Sussex		You shou	uld contac		if you consider
Emmanuel	(forme	rly New Hall)	Trinity		naming a	nother Co	llege as first c	noice.
Fitzwilliam	Newn	nam *	Trinity Hall					
Girton	Pemb	roke	Wolfson					
Gonville and Caius	Peterl	nouse	Open Application		* College	s for wome	n only	
Tick one: X I am currently studying,  Name of University (include country)  University of Utah (United States)		Subject (include Faculty/Department)		Degree HBS	Date	ving – go testarted	. ,	Expected Grade
A(6) Previous degree-level s	tudy (most	recent first)						
Name of University (include country)		Subject (include Faculty/Department)		Degree	Date	started	Date obtained	Grade
If you have worked on a research								

If you have worked on a research project, either for your first degree or subsequently, please describe your work below; your account should be intelligible to anyone who is not a specialist in your field. If you have no such research experience, leave this space blank; a blank entry will not prejudice your application.

Erik Andersen, Northwestern University, 40-50 hrs/week - May 2014 to Aug 2014 - Designed and built software to process data from flow cytometers and investigated the genetics of complex traits using linkage mapping in C. elegans; Gillian Stanfield, University of Utah, 20-25 hrs/week - Sep 2013 to May 2014/Aug 2014 to Present - Analyzed genomic sequence data and identified genetic variants affecting sperm activation in C. elegans; Erik Andersen, Northwestern University, 40-50 hrs/week - May 2013 to Aug 2013 - Constructed high-throughput phenotyping pipeline for use in genetic linkage mapping studies with C. elegans; Erik Jorgensen, University of Utah, 10-20 hrs/week - Sep 2012 to May 2013 - Investigated protein involved in synaptic vesicle recycling; Leonid Kruglyak, Princeton University, 40-50 hrs/week - May 2012 to Aug 2012 - Constructed C. elegans strains used to investigate the roles of genomic regions on phenotypes; Erik Jorgensen, University of Utah, 10-20 hrs/week - Sep 2011 to May 2012 - Constructed transgene landing sites in C. elegans genome

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#### A(7) Scholarships, prizes and other distinctions obtained (list only the most important)

Name of award	Reason for award	Date of award	Value of award, if any
Barry Goldwater Scholarship	Academic and research merit	Mar 2013	9207.26
Myriad Academic Excellence	Academic merit	Apr 2014	3069.09
Tuition Waiver Scholarship	Academic merit	Jul 2012	29463.21

#### A(8) If you have made other applications to Cambridge this year, give details here

Degree	Programme of study / research	Department

#### A(9) If you have made applications to other institutions this year, give details here

Degree	Programme of study / research	Institution	Department	Country
PhD	Genetics	Stanford	Genetics	United States
PhD	Genome Sciences	U of Washington	Genome Sciences	United States

#### A(10) Employment

From	То	Post Held	Name and Address of Employer
May 2014	Aug 2014		Northwestern University 2205 Tech Drive Hogan 2-100 Evanston 60208
Jan 2013	May 2013	Undergraduate Research Advisor	U of U Undergraduate Research 195 S. Central Campus Drive 132 Sill Center Salt Lake City 84112
May 2012	Aug 2012	Undergraduate Researcher	Howard Hughes Medical Inst. Carl Icahn Lab Princeton University Princeton 08540

No X

Will you be employed at least 40% full-time by the University of Cambridge while studying for this course?

Yes

A(11) Names and addresses of your academic referees

Prior to completing this section, please see the 'How to Apply' section of the Board's website for information regarding references. If your referees do not have e-mail addresses, please note that you are responsible for contacting them to request a reference.

There is an electronic reference system in place that will automatically contact your referees if you provide an email address for them.

Name Title Address
Town or city County/State or Province Country Postal Code
Email (University account where possible)

Are you currently employed?

First academic referee						
Gillian Stanfield						
Dr	_					
Salt Lake City						
Utah						
United States						
84112						

Second academic refer	ree
Leonid Kruglyak	
Dr	
Los Angeles	
California	
United States	
90095	

No X

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#### A(12) Summary details of research proposal or reason for applying for the course

Title and statement of your research degree proposal, or reason for wanting to undertake the course. The Dep	partment to which you are applying
may in addition require a separate, more detailed, research proposal; check the online Qualifications Directory	y for further information.

If you wish to work under a particular supervisor, state that person's name here:

Applicants for PhD, MSc or MLitt only.

The sheer amount of genomic data realized in recent years has created a boon in genome-driven biology. In order to make my own contribution to the field of genomics, I need to gain the knowledge necessary to implement the most modern mathematical and computational techniques and apply that knowledge to real-world problems. The Master of Philosophy degree program in Computational Biology will provide me with the foundation to make fundamental contributions to the field of genomic research. During the taught portion of the program, I will take classes such as Genome Sequence Analysis and Population Genetic Analysis of Genomic Data, which will build upon the skills that I have acquired in my study of natural variation in the roundworm Caenorhabditis elegans. Additionally, the taught modules include topics, such as systems biology and structural biology, with which I have considerably less experience but am eager to learn. The progression of computational analysis from DNA to protein will allow me to develop a vertically-integrated skill set with which I will better understand genetic and molecular interactions prior to applying this knowledge during the internship portion of the program. For my research project I will propose to utilize my existing knowledge in quantitative genetics along with my newly developed skills in population genetics and sequence analysis to further define the ways in which disease and disease susceptibility can be analyzed as a quantitative trait. In this project, I hope to combine the advantages of model organisms in the academic study of disease with the expertise in genomic medicine present in the rich biotech and pharmaceutical communities surrounding Cambridge to the advance the consideration of genomic data in the diagnosis and/or treatment of disease.

#### A(13) Part-time research degrees (part-time applicants only)

If you propose to study for a part-time research degree, please state your reasons for wishing to study **part-time** here. If you intend to remain in employment while studying, give details.

	, 0.0								
This is not requ	This is not required since you have currently opted for Full-time study								

#### A(14) Additional information in support of your application

You may write here your non-academic activities or any special circumstances not evident from other answers in this application, that you wish to draw to the attention of the assessors of your application. The Department to which you are applying may require a CV to be submitted with your application, check the online Qualifications Directory for further information. If you are seeking funding from the Cambridge Trust, you will be asked to give more details of your achievements in a separate section.

In my research, openness, transparency, and communication with the general public are paramount. I make a strong effort to ensure that the results of my research available in as public a forum as possible, including making software available under open source licenses and publishing in open access journals whenever financially possible. I have found great pleasure in communicating my work and views as a scientist with the general public in my experience as a regular contributor to the Public Library of Science's (PLOS) Student Blog. I plan to continue developing my scientific communication skills both internal and external to the academic community so as to have an impact on the rapid adoption of computational methods in biology and the improvement of scientific literacy, two goals that will assuredly lead to more agile biological research and informed public decisions.

#### A(15) Career goals and future aspirations

Please give an outline of your future career plans and intentions and explain how your proposed studies in Cambridge will help you achieve these aims.

I plan to complete a PhD program in genetics with a focus on computation and statistics. Following the completion of my PhD, I plan to first pursue a position as an academic scientist. An academic position will afford me a close-knit, yet open, scientific community as well as immerse me in an environment where scientific rigor is of supreme importance. In this academic position, I will have the opportunity to develop and hone my skills as an educator, sharing my knowledge and experience not only with graduate students in my laboratory but also with undergraduates in a classroom setting. Depending on the direction and medical pertinence of my research, I may then seek to form a startup company to translate my research to medically relevant applications. Regardless of my ability to start an independent genomics company, I envision that my career will span the realms of academic and industrial science. I will also seek to utilize my position as an educator to inspire the brightest young minds in biology to intellectually pursue the mysteries that have long puzzled the field. I hope to employ the field of quantitative genetics as a positive force in science and in society.

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#### SECTION B: Application for funding (academic year 2015/16 ONLY)

Please use this form to apply to the funding bodies listed below; you should check their individual websites for full information about eligibility criteria.
Please select at least one tick box on this page.
If you do not wish to apply to any of the funding bodies listed below please tick this box and proceed to Section C
If you <u>do</u> wish to apply for funding, please tick the relevant box(es) and complete any additional questions where required. Applicants may tick more than one box to apply to multiple funding bodies if they believe they are eligible.

Scholarship	Eligibility and deadline	How to apply	I wish to apply
Gates Cambridge	For citizens of countries outside the UK. Deadlines: 15 October 2014 (US citizens normally resident in the USA), 2 December 2014 (all other eligible applicants).	Tick box on the right and complete sections B1 and B2 below.	X
Cambridge Trust	For citizens of countries outside the UK.  Deadlines 2 December 2014 (international applicants) and 9 January 2015 (EU applicants, excluding the UK).	Tick box on the right and complete sections B3 and B4 below.	
Cambridge Home Student Scholarships Scheme	For citizens of the UK. Deadline: 9 January 2015.	Tick box on the right.	
Economic and Social Research Council	For UK and EU citizens applying for a research degree in economic and social research. Deadline: 9 January 2015.	Tick box on the right.	
Arts and Humanities Research Council	For UK and EU citizens applying for a research degree in arts and humanities. Deadline: 9 January 2015.	Tick box on the right.	
Other Research Councils ( BBSRC, EPSRC, MRC, NERC and STFC)	For UK and EU citizens applying for a research degree in these subject areas.  Deadlines are varied and awards are administered by individual departments.	Tick box on the right and enquire with department.	

Other funding: in addition to the funding bodies listed above, there are numerous other funding opportunities for postgraduate study and research at Cambridge. Many of these can be found on the University's <u>Graduate Funding</u> page, although applicants should also check with individual departments and Colleges about funding they may offer.

Supporting documentation: please note that after submitting the application form by the required deadline, you have a further 14 days to submit the required supporting documentation.

#### B(1) Gates Cambridge Scholarships

In not more than 500 words please explain why you are applying for a Gates Cambridge Scholarship and how you meet the four main criteria (<a href="http://www.gatescambridge.org/apply/">http://www.gatescambridge.org/apply/</a> for more information)

Though I have pursued research in genetics in great depth, my appetite for discovery is nearly insatiable. Genomic research presents both prodigious opportunities and daunting challenges. Analyses of sequence data and the utilization of sequence-driven experimentation offer a glimpse into a promising future, in which biological research is streamlined, dead ends are minimized, and mechanisms of disease and drug functionality are more rapidly elucidated.

Over the past two summers in the lab of Dr. Erik Andersen at Northwestern University, I sought to determine the ways in which the genetic variation in the model nematode Caenorhabditis elegans affects responses to different chemicals including herbicides, pesticides, chemotherapeutics, and anthelmintics, compounds used to treat infections of parasitic nematodes. I have helped to construct and optimize a screening technique that allows us to measure the physiological effects of these compounds. I then designed software to process the resulting data and run statistical procedures to correlate the physiological effects with known differences in DNA sequence, a process known as mapping. The results of this research could have implications for improving how parasitic nematode infections are treated in agriculture and human disease, improving the efficacy or reducing the side-effects of chemotherapy, or transforming the way we judge the ecological effects of pesticides and herbicides.

The field of genomics has the potential to revolutionize medicine and alleviate unnecessary suffering in a fashion not seen since the implementation of antibiotics and anesthetics. Automation, computation, and the ability to capably interact with computers will be critical to the incorporation of personalized genomic data into medical treatments. Moreover, much of biology is impossible to understand or explore without the aid of computational tools to analyze sequential and physical patterns. The overwhelming majority of biology and medicine will soon be out of reach to individuals who cannot utilize computational tools to augment their research.

Despite the promise of genomic research, the general public is often skeptical of the claims of researchers and corporations working in this field. Though skepticism is certainly warranted to an extent, much of the distrust and pushback stems from a lack of proper communication from researchers. In the spring of 2013, I joined the writing team at The Student Blog of the Public Library of Science (PLOS) to share my experiences in research and the ways in which the field of genomics is changing. I found that my values as a budding researcher aligned well with those of the team at PLOS, an organization that prioritizes open and easy access to scientific knowledge for both researchers and the general public. Without proper communication between scientists and the public, scientific findings will continue to be misrepresented in the media and unwarranted skepticism will continue to be the norm. I plan to improve scientific communication both now and throughout my career as a scientist. Through research, collaboration, and communication scientists can drive medical care across the world in a positive direction. My work will be a part of that force.

#### B(2) Details of your personal referee for the Gates Cambridge Scholarship

Your personal referee should be someone of appropriate standing who can comment on your suitability for a Gates Cambridge Scholarship (e.g. an academic or employer who can comment on your academic ability, leadership capacity and commitment to improving the lives of others). For full details see <a href="http://www.gatescambridge.org/apply/references.asp">http://www.gatescambridge.org/apply/references.asp</a>.

The personal referee should not be a family member, a friend, or yourself.

		_	
Name	Erik Andersen	Title (Mr/Mrs/Miss/Dr etc)	Dr
Address			
		]	
Town or city	Evanston		
County/State or Province	Illinois		
Country	United States		
Postal Code	60208-3500		
Email		-	
Re-enter Email to Confirm			

#### B(3) Cambridge Trust

Personal statement (max. 500 words). The Cambridge Trust offers scholarships to the academically highest scoring applicants with demonstrated financial need. Please give reasons why you believe you should be considered for a scholarship and mention those for which you consider yourself eligible; see the Scholarships section of <a href="https://www.cambridgetrust.org">www.cambridgetrust.org</a> for details. Note that some scholarships require you, in addition, to make separate applications to partner organisations of the Trust. Instructions and links are on the Trust's website.

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£ per year

34159

**FULL NAME** 

#### B(4) Financial details for the Cambridge Trust

Source

## **Estimated** <u>annual</u> amount in £ sterling required for your proposed course at Cambridge You will need to consult the following webpage for estimated course costs:

Details

www.admin.cam.ac.uk/students/gradadmissions/prospec/studying/feecost/fulltime.html

University Composition Fee (annual amount) £ 22674 Maintenance allowance (minimum annual amount) £ 11485

Total estimated annual financial commitment required £

#### Funds you are confident of raising annually to finance your course

Please give as much detail as possible of the funds you are able to raise annually. Note: this information is only used by the relevant funding bodies when making decisions on scholarships and for no other purpose. If you need to convert your currency into £ sterling, you should use a currency conversion site such as www.xe.com or www.oanda.com

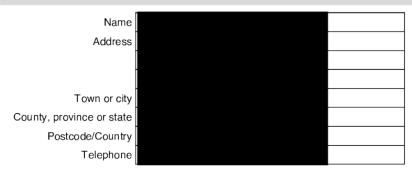
Scholarships and grants Please give details of any scholarships and/or grants that you have secured for your course at Cambridge		£	0
Personal funds Please give the source(s) and amount(s) of any personal funds you are able to contribute towards the cost of your course (e.g. income, savings, capital, etc)	Personal and parental savings	£	34159
Other funds Please give the source(s) and amount(s) of any other funds you are able to contribute towards the cost of your course		£	0
Tot	al funds available annually towards the cost of your course	£	34159
Annual shortfall, if any, between the total funds available and the cost of your course		£	0

#### Please give details of any scholarships tenable at Cambridge which you have applied for (or plan to apply for)

Awarding body	Date of decision	Tenure (years)	Annual Value £
Marshall Scholarship	Dec 2014	1	34159
Gates Cambridge Scholarship	Feb 2015	1	34159
Churchill Scholarship	Feb 2015	1	26000

#### SECTION C

#### C(1) Next of kin



### C(2) How did you hear about graduate programmes at Cambridge?

e.g. Prospectus, Internet, British Council, Careers Service etc (please specify)

The Marshall, Gates Cambridge, and Churchill Scholarship presentations

#### C(3) Declaration and Data Protection

This document forms the legal basis of your application to Cambridge. We reserve the right to refuse admission in the event of any misrepresentation by you. Submission of an application does not imply an offer of admission. Read the following statement carefully before you sign your application. We cannot accept your application without your signature and the date below.

- DATA PROTECTION ACT (1998)
  - The University of Cambridge, the Cambridge Colleges, Gates Cambridge and the Cambridge Commonwealth, European and International Trust will process your personal data (as defined by the Data Protection Act 1998) for the purpose of processing your applications for admission and funding, including as described on the two Parts of the Personal Data Sheet below:
  - · we may keep a copy of information provided in respect to your application and use the information to collect anonymised statistics or monitor equal opportunities (or both);
  - · we may use or disclose information provided in respect of your application for research purposes, but no information which could identify you will be published;
  - we will confirm that you are an applicant or student to banks and other third party organisations, as requested by you in writing;
  - · we will share your information as necessary with your referees; the appropriate staff at the Cambridge Colleges, the Cambridge Trust and Gates Cambridge and the University; your current and former educational institutions; the Student Loans Company; and in the case of international applicants, the British Council or appropriate agency;
  - in order to prevent or detect fraud, we may provide information from your application to outside organisations including the police, the Home Office, local authorities, examination boards or awarding bodies, and the Department for Work and Pensions and its agencies;
  - · where relevant and as required, we will provide information from your application to UK Visas and Immigration in order to act as your sponsor for visa purposes;
  - if accepted, we will further use your personal data in any manner and for any purposes described on the relevant Student Gateway pages, as published on the University website and amended from time to time;
  - if accepted, we will return data about you to the Higher Education Statistics Agency (as described at the following website: http://www.hesa.ac.uk/collection-notices) and other external agencies as required;
  - if accepted, and if you subsequently apply to continue as a graduate student, all of the material contained in your current application (with the exception of Part 2 of the Personal Data Sheet) will be made available to the parties mentioned above, alongside your continuation application.
- I certify that all the information given in this application is complete and accurate, and I understand that if I have given false or misleading information the University of Cambridge will not admit me as a Graduate or Postgraduate student, and may take legal action against me.
- I certify that I am the original and sole author of all work submitted as part of this application, except where clearly indicated 3 otherwise.
- I understand that if my application is unsuccessful, the papers relating to it will be destroyed, and cannot be returned.

## Personal Data Sheet



The Personal Data Sheet is circulated to departments along with the rest of your application, but information on this sheet will not be considered when making the academic decision on whether to make an offer of admission. The sheet is circulated because if you do declare a disability in Section (2) below, it may be helpful for your department to know this in the event that they wish to organise an interview, so that any relevant adjustments can be made. If you are made a conditional offer, this sheet will also be sent to Colleges that consider your application. See the Board's website for further information about support for disabled students.

Note: there are two sides to this form.

Name (legal)	Shimko	Shimko Tyler		Tyler	Mr	
	Last (family)	) First and midd		rst and middle	Э	Title (Mr/Mrs/Miss/Dr etc)
(1) Abou	ıt your family while you are in Camb	ridge				
_	rive details here by ticking the appropri unt of maintenance required for each a				-	
X I	will be unaccompanied					
	shall bring a partner or spouse Name	me of partner o	r spouse*:			
	Is h	e/she also app	lying for graduate study a	ıt Cambridge	? (tick box)	
		our partner is eith have used in the	ner an applicant to the Univer eir application.	sity of Cambrid	dge or already in residence	e, please give the name
ПП	shall bring one child Date	e of birth:		] (DD/MI	M/YYYY)	
	shall bring a second child Date	e of birth:		] (DD/MI	M/YYYY)	
ПП	shall bring a third child Date	e of birth:		] (DD/MI	M/YYYY)	
Will all th	e people indicated be financially deper	dent on you?	Yes X No	If no, ple	ase give details below:	
(2) Supr	oort needs relating to disability or ch	ronic illness				
Please ti	ick the appropriate box below. If you do to wish to provide any information in the	o not have a di			condition, use code 00	('I have no disability'). If
Under the Equality Act 2010, a disability is any physical or mental impairment which has a substantial and long term adverse effect on an individual's ability to carry out normal day to day activities. We invite disclosure from anyone who feels they may have a disability or other condition which is likely to require additional support during their time at Cambridge.						
	eleting this section you will be put in cou effectively. The Disability Resource Ce					required to enable you
X I	have no disability (00)	condi	e a long standing illness tion such as cancer, HIV, ic heart disease, or epile	diabetes,		nave a serious visual rected by glasses (58)
	have two or more impairments and/o disabling medical conditions (08)	r depre	e a mental health cond ession/schizophrenia/anxi der) (55)		I have a disability medical condition	r, impairment or not listed above (96)
	have a Specific Learning Difficulty (e.g Dyslexia/Dyspraxia/AD(H)D (51)	issue	e a physical impairment of s (e.g. difficulty using arm lchair or crutches) (56)		Information refuse	ed (97)
☐ i	have a social/communication mpairment such as Asperger's syndrome/other autistic spectrum disorder (53)		deaf or have a seriou rment (57)	s hearing		

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12	) About	VOUR	inanci	al ci	tuation

This information is helpful to Colleges who need to estimate the likelihood of you being able to take up your place, but will not prejudice our application)				
f you are not successful in o	btaining a	scholarship, will you be able to fund your studies from	m private funds?	
X	Yes			
	No	(please tick)		
1				
		Signature	Date	