



YEARBOOK 2016



UNIVERSITY OF
CAMBRIDGE

PATRONS



In 2012, Bill and Melinda Gates generously agreed to become patrons of the Gates Cambridge Trust. The Trust is delighted to reinforce a direct link between the Gates Cambridge Scholarships and the Gates family and the Foundation.

ABOUT THE SCHOLARSHIPS

The Gates Cambridge Scholarship programme aims to build a global network of future leaders committed to improving the lives of others.

Gates Cambridge Scholarships are one of the most prestigious international scholarships in the world. The programme was established in October 2000 by a donation of US\$210m from the Bill and Melinda Gates Foundation to the University of Cambridge; this is the largest ever single donation to a UK university.

Scholarships are awarded to outstanding applicants from countries outside the UK to pursue a full-time postgraduate degree in any subject available at the University of Cambridge.

Scholars are selected on the basis of their outstanding intellectual ability, leadership potential, commitment to improving the lives of others and a good fit between their qualifications and aspirations and the postgraduate programme at Cambridge for which they are applying.

The Gates Cambridge Trust administers all aspects of the programme, including supporting the important work of the Scholars' Council and Alumni Association.

The first class of Scholars came in to residence in October 2001; since then the Trust has awarded 1,596 scholarships to citizens of 105 countries. There are usually 225 scholars in residence at any one time.

The class of 2016 consists of 90 outstanding Scholars from 31 countries who will be widely distributed amongst Cambridge's Colleges and Departments. The following pages highlight their achievements, activities and aspirations.

Full details about the Gates Cambridge Scholarships are available from www.gatescambridge.org.

CONTENTS

About the Scholarships	3
Foreword	4
People	5
Scholars' Council	6–7
Alumni Association	7
Building a Global Network	8–9
Statistical Summary	10–11
Class of 2016 (A–Z)	12–45

FOREWORD



Welcome to Cambridge and the Gates Cambridge Scholar community! You have been successful in an extraordinarily competitive selection process and I would like to congratulate you most sincerely on your achievement. You will now begin what I very much hope will be a memorable and successful period of postgraduate study.

Cambridge University has had over 800 years to become a complex environment and one that you will gradually come to understand and to navigate. You have now joined at least three communities. First, the vibrant community of Gates Cambridge Scholars. Second, your University Department, Faculty, or Institute and, if you are a research Masters or PhD student, your supervisor's Research Group where you will conduct the majority of your original work. Third, you are also members of thriving graduate communities (Middle Combination Rooms, or MCRs) in your Colleges and this, I suspect, will be the most difficult to understand aspect of your lives here, since the collegiate system in Cambridge, along with that in Oxford, is unique.

I do not expect you to know and understand everything immediately, far from it. But you should know that the staff of the Trust, as well as current Scholars, will do everything possible to help you to do so and to make the most of your hard won opportunity to be a graduate student here.

The Gates Cambridge Scholars' Handbook will provide you with much of the information you will need to guide you through your arrival here and will help to answer some of your administrative and financial questions. Do not hesitate to contact the staff of the Trust if you have any specific queries that are not addressed in the booklet.

You will attend many events during the year, some organised by the Trust, but the great majority organised by the Scholars' Council and scholars. Some focused on your professional development (the excellent Learning for Purpose programme) and an increasing number that will bring you into contact with the Gates Cambridge Alumni Association and many alumni. While you should always place your academic research and study at the top of the list of your priorities, not least since the qualification you will gain in Cambridge is the passport to the next phase of your careers, you will also be able to take full advantage of these other opportunities and this, I am sure, will enrich your time in Cambridge.

The wonderful generosity of the gift to the University from the Bill and Melinda Gates Foundation has provided you with a unique opportunity to study in Cambridge – but it is your excellence that has enabled you to grasp it. Eventually and all too quickly, you the Gates Cambridge Scholars of 2016 will graduate and join a growing and ambitious global network of leaders, having the responsibility and privilege to shape the future and fulfil your commitment to improving the lives of others. I wish you every success in doing so and welcome you most warmly to Cambridge.

Professor Barry Everitt FRS
Provost

PEOPLE

TRUSTEES



PROFESSOR SIR LESZEK BORYSIEWICZ
FRS FRCP FMEDSCI
Vice-Chancellor of the University of
Cambridge (Chair)



MR TIMOTHY HARVEY-SAMUEL
Bursar of Corpus Christi College,
Cambridge (Honorary Treasurer)



PROFESSOR MARY SUE COLEMAN
Former President of the University of
Michigan; President of the Association
of American Universities



DR MIMI GATES
Former Director of the Seattle Art Museum
and Yale University Art Gallery



LEIGH MORGAN
Chief Operating Officer at the Bill and
Melinda Gates Foundation



DR ANDREW ROBERTSON
AVP, Head of Regulatory Science
and Policy, NA at Sanofi and
Gates Cambridge Scholar (2001)



PROFESSOR DAVID RUNCIMAN
Head of the Department of Political
Science and International Studies,
University of Cambridge and Fellow of
Trinity Hall, Cambridge



PROFESSOR SUSAN SMITH FBA
Mistress of Girton College, Cambridge



DAME BARBARA STOCKING DBE
President of Murray Edwards College,
Cambridge; former Chief Executive
of Oxfam GB

STAFF



BARRY EVERITT FRS FMEDSCI
PROVOST
Professor of Behavioural Neuroscience,
University of Cambridge; former Master
of Downing College, Cambridge



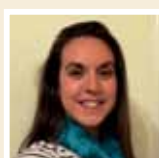
DR JONATHAN NICHOLLS
SECRETARY
Registrary, University of Cambridge



RUTH BENNETT
DIRECTOR OF FINANCE



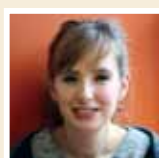
JIM SMITH
PROGRAMME DIRECTOR
Senior Member, Wolfson College,
Cambridge



FIONA BEEMING
ALUMNI RELATIONS OFFICER



LUISA CLARKE
PROGRAMME ADMINISTRATOR



COLETTE VAN DEN HOUT
PROGRAMME ASSISTANT



USHA VIRDEE
ACCOUNTS OFFICER



MANDY GARNER
COMMUNICATIONS OFFICER

GATES CAMBRIDGE SCHOLARS' COUNCIL 2015–2016

The Gates Cambridge Scholars' Council supports the aims of the Gates Cambridge Scholarship to create a network of responsible global leaders. Please refer to the Scholars' Handbook for further information.



Paul Bergen
President and Chair
The President/Chair of the Scholars' Council oversees its activities and liaises with the Trust on behalf of Scholars.



Mohammad Usman
Vice President and Secretary
The Vice President/Secretary works with the President to coordinate the Council's activities and to liaise with the Trust.



Sridhar Rajan Jagannathan
Treasurer
The Treasurer oversees the finances of the Council.



Margaret Comer
Communications Officer
The Communications Officer is the conduit for assembling and distributing information to and about the Scholar community.



Zenobia Ismail
Community Officer
The Community Officer solicits ongoing feedback from Scholars and coordinates community service programming.



Victoria Herrmann
Alumni Officer
The Alumni Officer works closely with the Gates Cambridge Alumni Association to connect the Scholar and Alumni communities.



Michelle Teplensky
Internal Officer
The Internal Officer oversees the Scholars' Common Room and organises Internal Symposia each term.



Callie Vandewiele
External Officer
The External Officer's role is to maintain good relationships between Scholars and members of the wider academic community.



Jerelle Joseph
Social Officer
The Social Officers plan a variety of events in Cambridge and trips further afield throughout the year.



Natalie Rebeyev
Social Officer
The Social Officers plan a variety of events in Cambridge and trips further afield throughout the year.



Joseph McAbee
Technology Officer
The Technology Officer is responsible for maintaining the electronic hardware and software in the Scholars' Common Room.



Arazi Pinhas
Technology Officer
The Technology Officer is responsible for maintaining the electronic hardware and software in the Scholars' Common Room.


Kerstin Goepfrich
Learning for Purpose Co-Director

The Learning for Purpose Directors lead and organise a series of workshops aimed at skills development for Scholars.


Shraddha Kaur
Learning for Purpose Co-Director

The Learning for Purpose Directors lead and organise a series of workshops aimed at skills development for Scholars.


Rebecca Love
Orientation Co-Director

The Orientation Directors lead the Orientation committee, which organises Induction and Orientation activities to introduce the new Scholars to the Scholarship and build bonds amongst the community.


Alex Wood
Orientation Co-Director

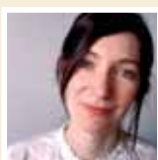
The Orientation Directors lead the Orientation committee, which organises Induction and Orientation activities to introduce the new Scholars to the Scholarship and build bonds amongst the community.


Annika Pecchia-Bekum
Editor-in-Chief, The Scholar Magazine

The EIC is responsible for internal and external publication of Scholar articles and other content.

GATES CAMBRIDGE ALUMNI ASSOCIATION (GCAA)

The Gates Cambridge Alumni Association (GCAA) aims to develop an international network of Gates Cambridge Scholars, to promote the Gates Cambridge Scholarship and to engage Alumni through the exchange of knowledge, academic ideas, and professional development. Please refer to the Scholars' Handbook for further information.


Rebecca Saunderson (2012)

Co-Chair


Lauren Zeitels (2006)

Co-Chair


Michael Duyzend (2008)

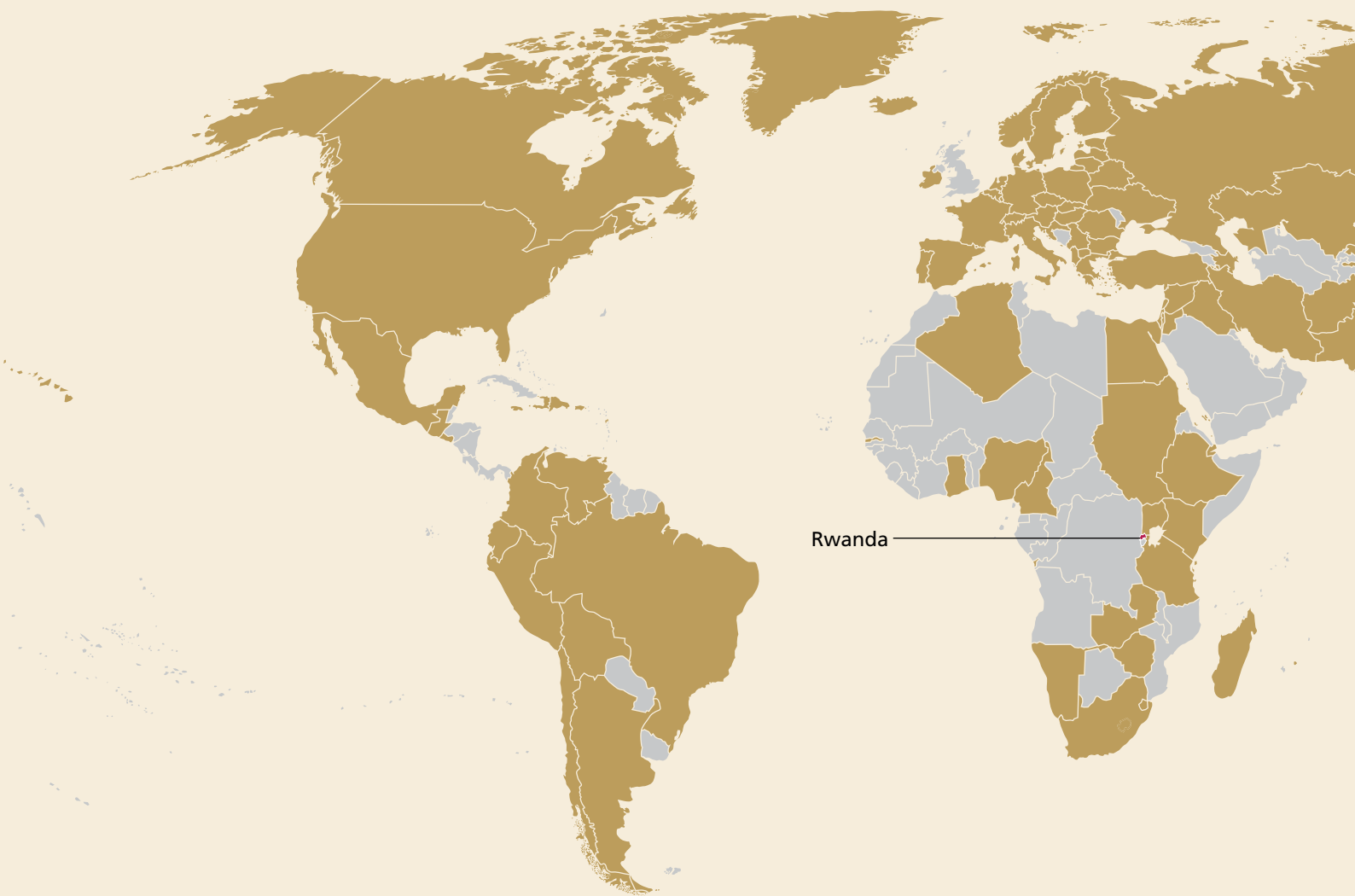
Treasurer





Andrew Gruen (2008)

Secretary

BUILDING A GLOBAL NETWORK

This year we welcome our first Scholar from Rwanda, which expands the global reach of the Gates Cambridge programme to 105 countries.



KEY  Countries represented to date  Countries not yet represented  New country in class of 2016



Rwanda
Alice Musabende
 Politics and International Studies
 Murray Edwards College (New Hall)

I feel very privileged and humbled to be the first citizen of Rwanda to join the community of Gates Cambridge Scholars. Over the last 22 years since the genocide against the Tutsis, my country has realised the impossible task of rising from its ashes and launching an unprecedented renaissance. Instilled with the Rwandan values to be of service to my country and to the world at large, I am committed to using my time and experience at Cambridge to learn how to lead, to lend my voice where I can and to be of better service to the world. I also hope to inspire and pave the way for more scholars from the Great Lakes of Africa to be part of this great community.

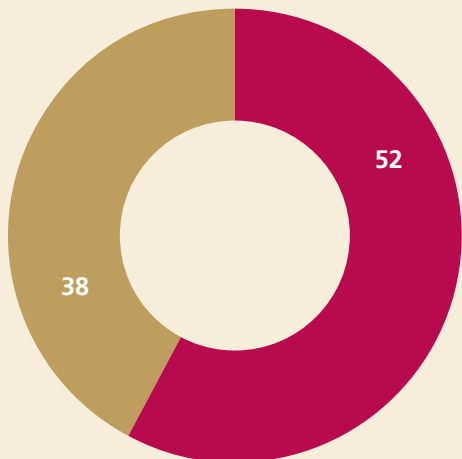
Class of 2016 by Primary Citizenship

Australia	3	New Zealand	3
Belarus	1	Pakistan	3
Canada	7	Philippines	1
Colombia	1	Romania	1
Czech Republic	1	Russian Federation	1
Denmark	1	Rwanda	1
France	1	Singapore	2
Germany	4	Slovakia	1
India	3	South Africa	1
Iran, Islamic Republic of	1	Sri Lanka	2
Kenya	1	Sudan	1
Korea, Republic of	1	Sweden	1
Lebanon	1	Ukraine	1
Malaysia	1	United Kingdom	1
Mexico	2	United States	40
Netherlands	1		

STATISTICAL SUMMARY: CLASS OF 2016

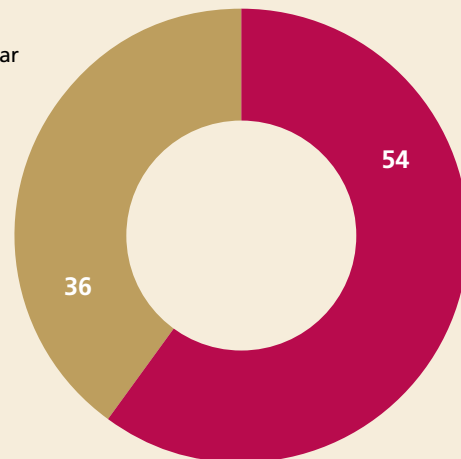
Gender

Female
Male

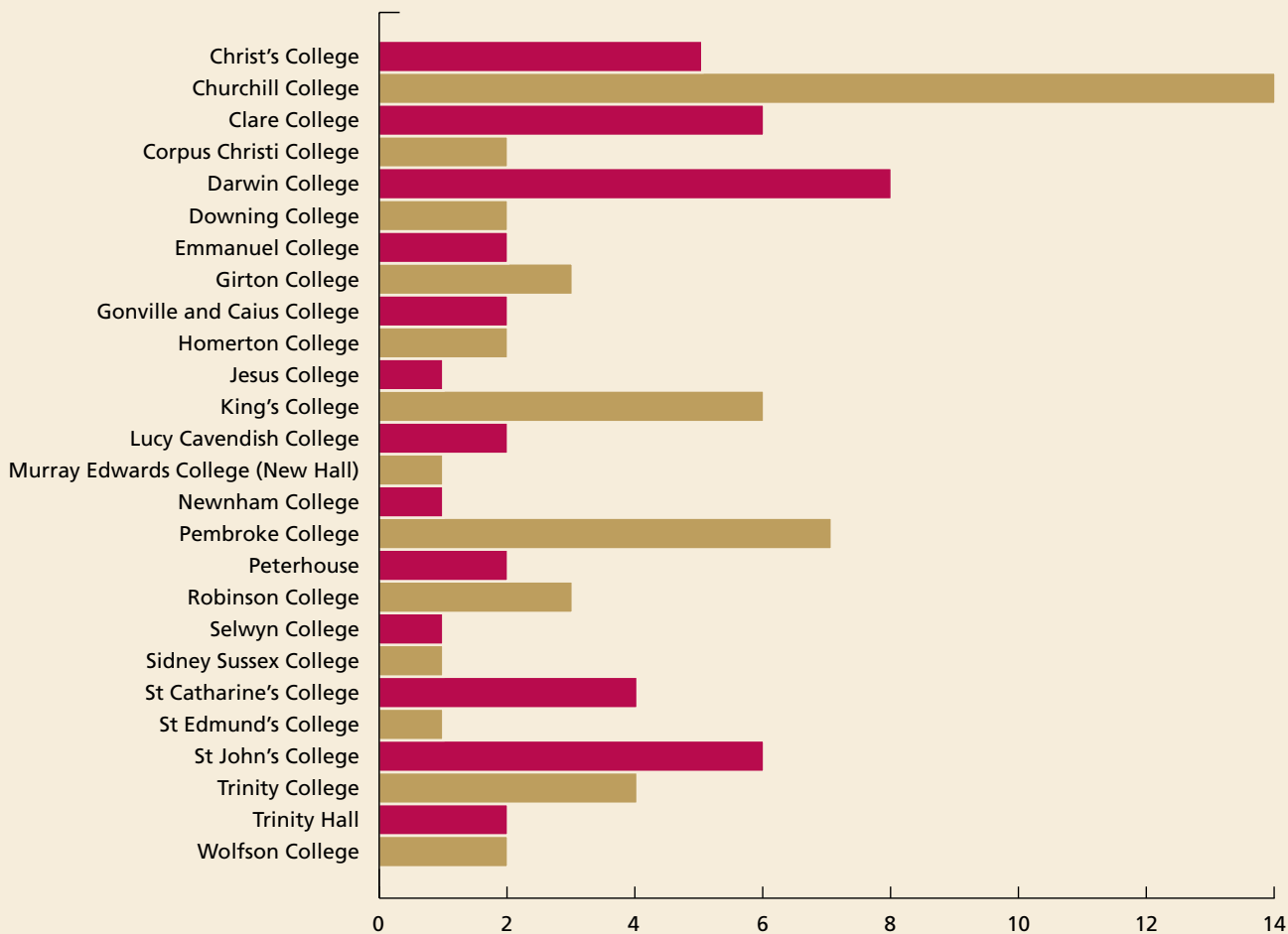


Degree type

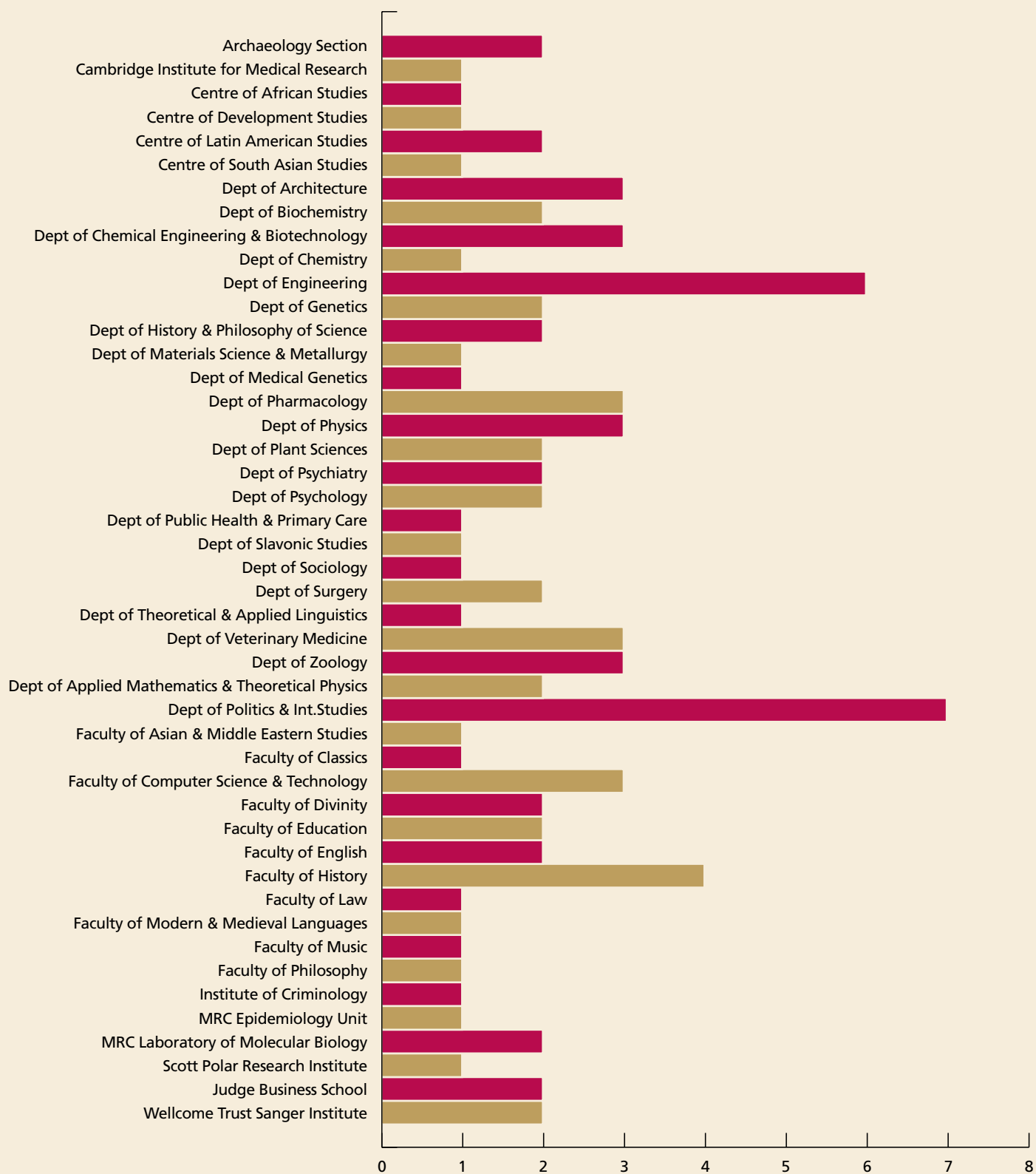
PhD
One-year



College



Department



Sanna Alas

USA

MPhil History and Philosophy of Science and Medicine
Lucy Cavendish College



Growing up a child of immigrants in the heart of Orange County, I was graced with the so-called hyphenated identity of a Muslim-Syrian-American. That hyphen, the moment of mediation between two seemingly disparate things, has served as the foundation for my academic interests and

future aspirations. It fuels my passion for intersectional issues as an activist and advocate for educational and environmental justice in South LA. It has also fostered an intellectual curiosity that led me to pursue a double major in Human Biology & Society and Comparative Literature at UCLA, where I was able to conduct research on health disparities while exploring the use of quantitative research methods in the Humanities. As a Gates Scholar, I hope to continue this narrative with my proposed research centred on the theme of translation; I situate this not only as a practice but also as a meditative process that has shaped the development and reification of certain historical, linguistic, and cultural legacies in science and medicine. As an aspiring activist and physician-scholar, I ultimately hope to employ this critical framework and the network of the Gates Cambridge community in the development and practice of a more socially attuned and interdisciplinary medicine.

Aicha Aleian

France / Jordan

PhD Psychology
Emmanuel College



My passion for Neuroscience stems from my deep interest in psychiatry, especially in drug addiction. This chronic relapsing disorder, which causes much suffering in addicted individuals and their families, is one of the major concerns of modern societies which have yet to develop effective

preventive strategies or treatments. I believe that one of the best approaches to deliver better pharmacological treatments is through a better understanding of the neural, including neurochemical mechanisms, underlying addiction. During my PhD, I aim to investigate the neural and cellular mechanisms of the individual vulnerability to develop compulsive drug seeking, the hallmark feature of addiction. After Cambridge, I plan to develop my skills in brain imaging in humans and then set up my own research lab with a translational component, including both pre-clinical models and human studies as I am convinced that it is the best way to address the question of psychiatric disorders. I am honoured to be part of a community that aspire to make the world a better place! I am a French Palestinian and my interests include; humanitarian work, entrepreneurship and women and minorities in science and society.

Miriam Alvarado

USA / UK

PhD Medical Science@MRC Epidemiology Unit
Robinson College



Originally from California, I have been lucky enough to spend the last three years in Barbados studying physical activity and health disparities. I originally came to the Caribbean as a Fulbright Fellow, and was later affiliated with the University of the West Indies, Cavehill. The government of

Barbados has recently passed a sugar-sweetened beverage tax and I am excited to focus my PhD with the MRC Epidemiology Unit on a multi-faceted evaluation of this tax. As so many countries around the world face growing concerns around obesity, diabetes and other related conditions, it is important for us to understand which policy tools are effective at addressing these issues at a population level. Before coming to Barbados, I was a Post Bachelor Fellow at the Institute of Health Metrics and Evaluation and focused on the Global Burden of Disease and social determinants of health. I received my MPH from the University of Washington, and have a BA in Economics and Development Studies from the University of California, Berkeley. It is an incredible honour to join the Gates Cambridge community, and I am looking forward to being part of, and contributing to, such a diverse and committed group of scholars.

Caitlin Andrews

USA

PhD Zoology
King's College



I have always been passionate about understanding how animals think, feel, and interact with the world around them. A native of Massachusetts, I graduated from Harvard University, where I explored these ideas in many contexts-studying parrot cognition in Dr. Irene Pepperberg's lab at Harvard;

primate-human interactions in Rwanda; dogs' perceptions of morality at Yale University's Canine Cognition Center; and gorilla behaviour at Boston's Franklin Park Zoo. Most recently, I conducted my undergraduate thesis research in Mexico, studying sex differences in the ranging behaviour of Yucatan spider monkeys in the Calakmul Biosphere Reserve. These experiences have confirmed my belief that animals exhibit unique, individual behavioural tendencies, or "personalities", bringing into question why different personality traits might be favoured in the wild. At Cambridge, I will pursue my PhD under Dr. Rose Thorogood, examining how personality and social network position influence fitness and other outcomes in hihi (endangered New Zealand birds), and how this information can be used to develop better conservation strategies. Beyond my research, I hope to continue pursuing my other interests in conservation education, creative writing, world music, and percussion.

Peter Asimov

USA

PhD Music
Clare College

Having grown up in New York City, I was raised to believe in the mythologised image of the city as a “melting pot”, a place where diverse immigrant communities coexist and commingle, uniting under a metropolitan identity; the reality is considerably more complex and for many, less rosy. Eclectic

musical composition might seem to bespeak “melted” societies, but there is harsher truth behind the social forces that would rather canonise an eclectic Western composer’s appropriative works before embracing the diverse musical cultures from which those inspirations were generated. Given my background in musical performance, and studies in comparative literature and as an undergraduate at Brown University, I found fusion between my diverse interests in my graduate studies in musicology at Oxford. Now, in my doctoral research, I hope to develop a notion of musical eclecticism to describe synthetic musical voices that build upon collaged musical appropriations, especially in 20th-century France, U.S., and U.K. My research will provide insights on the impact of multiculturalism on Western music and musicians. These questions are central, as my home country continues struggling to reconcile its multicultural reality with its narrative of European cultural inheritance. Finally, as an aspiring educator, I hope to advocate for the broad and interdisciplinary study of music in schools.

Madeleine Booth

USA

MPhil Theoretical & Applied Linguistics
Darwin College

Born in Montréal, Québec and raised in Nashville, Tennessee, I have always been aware of language and its role in identity. As an undergraduate at Swarthmore College studying Biology and Linguistics, I became interested in endangered languages and their conservation. My research and

senior thesis explored the endangered Papua New Guinean language of Yokoim, and my study of Arabic led me to love Semitic languages. Language is one of the most complex systems humans have created, and the sheer diversity of language is testimony to humanity’s creativity and the breadth of perspectives on our world. As a repository of knowledge, history, and memory, it is also a key component of personal and communal identity. Yet about half of the world’s circa 7,000 languages are classified as endangered, at risk of dying out and becoming lost to their communities and the wider world. I am grateful to the Gates Cambridge Trust for the opportunity to pursue an MPhil in Linguistics at Cambridge. There, I aim to build a foundation for my future work in the classroom and field with these languages and their speaking communities. My interests include; bread baking, origami, knitting, economics, political satire, kayaking, running half-marathons, travelling.

Maheetha Bharadwaj

USA

MPhil Genomic Medicine
Clare College

Passionate about delivering quality healthcare to all, I came to Stanford with the intention of taking up a career in healthcare. Pursuing a bachelor’s in biology, a master’s in biomedical informatics, and genomics research equipped me to understand the role of genome mutations in disease processes.

At the McDonnell Genome Institute at Washington University, I searched sequencing and expression data for patterns in tumour suppressors and oncogenes that caused cancer. At Stanford, I studied translational allelic-specific expression in human lymphoblastoid cells. The complexity of our genome fascinated me. With increasing availability of sequencing data, it is important to gain the skills to analyse and interpret this data meaningfully for a future of genetics-driven, preventative, personalised medicine. Thus at Cambridge, I will explore ways to incorporate sequencing data and technologies directly into patient care delivery to reach my goal of delivering healthcare in innovative ways to my local community and personalised medicine to bedsides globally. I am the founder of Stanford Music and Medicine, an organisation that uses music as a form of therapy for nursing home residents and I also work for a non-profit that develops arts-based science supplemental lesson plans for students in Palo Alto.

Eric Bringley

USA

PhD Chemical Engineering
Robinson College

I grew up in Columbia, South Carolina loving computers and mathematics for as long as I can remember and grew to love chemistry early in high school. While attending the University of South Carolina, I studied chemical engineering with minors in chemistry and mathematics.

My curious nature led me to perform research in a variety of fields that varied from analytical chemistry, to nuclear physics, to mathematical modelling. With a unique and diverse set of skills and experiences, I wish to make contributions to global problems through computational modelling. My PhD will consist of stochastic and multilevel modelling of a variety of chemical systems including combustion engines of biofuels. I am humbled at the opportunity to study at Cambridge which will allow me to grow as a global citizen, a researcher, and a leader. My interests include; food, travelling, basketball, running, rock climbing, reading, music, statistics.

A SUGAR TAX FOR GLOBAL HEALTH

MIRIAM ALVORADO

A keen interest in the socio-economic determinants of health has driven Miriam Alvarado's research work from high school through her university years, leading to stints working on projects in India, Ghana and Barbados.

In Barbados, she has been focusing on the high prevalence of inactivity amongst women, which can lead to a higher risk of many non-communicable diseases.

In September she plans to take that research one step further when she begins her PhD which will provide an evaluation of the country's tax on sugar-sweetened beverages, introduced last September.

Miriam's interest in global health began in high school in California when she went on a global youth leadership seminar. It was the first time she had been exposed to international politics and issues such as global health and human rights and became a springboard for the type of courses she chose at the University of California Berkeley. She opted for courses in economics and development studies and spent six months in Ghana working on a PhotoVoice project which involved teaching young people photography skills so they could use images to explore their perceptions of health issues.

For three summers she worked via the student organisation Haath Mein Sehat on a water and sanitation project in India aimed at reducing illness in under fives. The first year she was the PhotoVoice coordinator, working with a group of college students and youth in different urban slums to investigate their daily experience of water sanitation.

By the third summer she was director of the organisation, coordinating a group of nine students who were doing water quality testing paired with ethnographic research. That involved staying with families and collecting water samples at different times of day to test for bacteria like E. coli. This led to new insights about high-risk contamination pathways, such as children's bottles which are difficult to clean and accumulate high levels of dangerous contamination. That experience was to prove pivotal for her subsequent career, highlighting the importance of socio-economic factors in global health work.

After finishing her undergraduate degree, Miriam took up a three-year Post Bachelor Fellowship at the Institute of Health Metrics and Evaluation in Seattle in order to build her quantitative data skills in an international public health setting. During that fellowship she was able to return to Ghana for two months to do field work. She worked on the Access, Bottlenecks, Costs, and Equity (ABCE) project, a



multi-pronged and multi-country research collaboration focused on understanding what drives and hinders health service provision. It involved going to hospitals and health centres to review budgets, outputs and costs. Miriam coordinated the 10 different teams in Ghana and travelled around the country.

GUN CRIME AND OBESITY

Back in the US, she worked on the Global Burden of Diseases, Injuries, and Risk Factors Study, a project mapping disease and disability in the world. For her thesis, however, she opted to focus on US policy-related issues and analysed the impact of gun laws on domestic violence, with a particular emphasis on gun-related homicides. She was interested in whether policy intervention could help to reduce the murder rate.

When her fellowship finished she decided to revert to her interest in the socio-economic determinants of health but this time through the prism of chronic disease prevention. "It is becoming clear that chronic disease is the next massive global health burden," she says.

She applied for a Fulbright Fellowship to work on a project at the Chronic Disease Research Group at the University of the West Indies, working with women in Barbados. Women's obesity rate in Barbados is almost twice as high as the obesity rate amongst men. Two reasons are lack of physical activity and diet. Miriam's research looks at the role of physical activity and shows that this is in part linked to highly gendered expectations of women's role in the household.

Lucia Calthorpe

USA / UK

MPhil in Epidemiology
Peterhouse

My interest in the intersection of child nutrition and education grew out of my experience helping to start Vincent Academy, a charter school in West Oakland, CA. I have pursued the topic of child nutrition in my coursework as a Health and Societies major at the University of Pennsylvania. My thesis investigated the impact of recent changes to the nutritional composition of school meals in Philadelphia and its surrounding suburbs. As a Gates Cambridge scholar, I hope to continue to explore the potential for schools to function as a locus for health intervention, with a specific focus on mechanisms for preventing childhood obesity. As an undergraduate, I have been involved in starting and managing an afterschool program at the HMS School for Children with Cerebral Palsy and have worked as a college access mentor at West Philadelphia High School. Going forward, I hope to continue to work with children in a range of educational settings. My interests include; mountain biking, hiking, sailing, skiing (downhill and cross country), running, and baking.

Mamasa Camara

USA

MPhil African Studies
Churchill College

As the trilingual daughter of a traditional West African healer, my identity embodies the complexity of diaspora, migration, and collective memory. My research interests are in African identity formation, the social, political, and historical processes which inform various African experiences across and through diaspora. Through a historical lens I investigate the practice of female circumcision and how to apply this analysis to aid contemporary efforts to address the practice. My past research explored British colonial narratives on female circumcision in Kenya and received the highest honour thesis award at Spelman College. In 2012, I collaborated with the Vice President of the Gambia to organise the first national conference on women's health to mutually create strategies to address women's health disparities. In 2014, I travelled to China to research how West Africans construct community and engage their host population while navigating difficult political circumstances. I am committed to contributing to knowledge production that engages with communities and their material realities. At Cambridge I will continue to excavate how historical forces inform contemporary moments in African Studies, by examining discourse on female circumcision and its real-world implications.

Eddie Cano Gamez

Mexico

MPhil Biological Science (Sanger)
Trinity Hall

Imagine a world where you visited a doctor and he could know everything about you with just a tiny blood sample: which diseases you have or might someday have, which drugs suit you better and which ones will not work for you at all, which conditions affect your family members, which allergies you are likely to develop... This is the biotech revolution: rapidly-changing scientific developments that started with the human genome and will eventually transform what we think life is, our understanding of human kind, and the way we treat diseases. In coming to Cambridge, I intend to contribute to this revolution by studying how and why our DNA predisposes us to auto immune diseases. I will also be involved with cutting-edge technologies that allow us to look into this massive amount of data. I grew up in a suburban area of Mexico City, where I completed my undergraduate studies. I want to show the Latin American community that science is not only accessible for developed countries, but is suitable for everybody and they are able to succeed, if they are willing to work hard. Apart from science, my interests extend to music (I play a bit of violin, piano, guitar, and percussions), writing, reading (Saramago, Auster and Murakami being my favourite authors), cooking Mexican cuisine, tango dancing, second hand-book shops, and learning languages.

Yung In Chae

South Korea

MPhil Classics
St Catharine's College

Hailing from Seoul, South Korea, I did not encounter the classics until my freshman year at Princeton University, when I enrolled in Latin 101 almost on a whim. The following summer I took a course in Ancient Greek, and thus began an intense affair with languages, as I soon added French, Italian and German to my collection – all of which enhance my work with the classics. As someone with extensive experience in speech and debate, I have an equally strong commitment to political issues. My interests are perhaps best exemplified by my job at the Paideia Institute, a non-profit organisation for classical study, where I am a Research Fellow and edit its online journal for writing about the ancient world in modern ways, *Eidolon*. I was also a Master's student in History and Civilizations at the *École des Hautes Études en Sciences Sociales* in Paris, France, where I researched Simone de Beauvoir's classical education. I hope to expand on that project as I pursue an MPhil in Classics at the University of Cambridge, writing a thesis on the classical references in De Beauvoir's *The Second Sex* while applying theory, particularly environmental and feminist theory, to the classics in order to gain insight into present-day problems such as the ecological crisis and gender inequality.

Sampurna Chakrabarti

India

PhD Pharmacology
Corpus Christi College



Originally from India, I will be graduating in May 2016 with BSc in Biological Sciences and BA in Psychology from The State University of New York at Buffalo, USA. During my bachelors, I fell in love with neuroscience and have conducted research in the field for the past three years. I write a

blog at sampurnabuffalo.wordpress.com to make neuroscience accessible to a broader audience. For my PhD, I will be studying drug targets for arthritic pain in the lab of Dr. Ewan St. John Smith at the Department of Pharmacology. My research will help understand arthritis and pain pathologies that affect millions of people worldwide. I am also passionate about educational equality and hope to work with organizations around the world, especially in developing countries, to make quality education available to all. I am honoured and excited to become a member of the vibrant and compassionate Gates Cambridge community where scholars from across the world share the vision of making a difference in the world.

Daniel Charytonowicz

USA / Poland

MPhil Bioscience Enterprise
St Catharine's College



As an undergraduate Biomedical Engineering student at the University of Delaware, I developed a strong interest in biomedical technologies through a combination of research experiences and self-started software development projects. I have always had a passion for computer related

technologies, and am looking for ways in which to apply this knowledge towards expanding the capabilities of modern healthcare. As a future medical student, studying Bioscience Enterprise at Cambridge will allow me to gain a deeper understanding of the challenges that must be overcome to bring modern research advances into healthcare practice. I am proud to be joining the global Gates Cambridge community, and am looking forward to working with other talented scholars to improve the lives of individuals across the planet.

Sivapalan Chelvaniththilan

Sri Lanka

PhD Physics
Churchill College



I was born in Jaffna, Sri Lanka during the peak of the war. My parents had lost their house to aerial bombing two years before I was born and three weeks after their wedding. After I was born, we were displaced five times. Between 2001 and 2005, I studied in New Delhi where my mother went to do a PhD and hence missed most of the peaceful time when a ceasefire was held. The fighting started again in 2005 and continued until 2009. In 2009, transport between Jaffna and Colombo, the capital city, became possible. I used this opportunity to sit for the London AL examinations and was fortunate to win a Reach Oxford scholarship. At Oxford I was able to learn about research in different areas of Physics by participating in small research projects supervised by my tutors. In particular, I became interested in computational biophysics and I am currently working on a project on the molecular dynamics of proteins for my undergraduate degree. At Cambridge, I will be using the same techniques to study the mechanisms of activation and silencing of genes in DNA.

Kevin Chew

Singapore

PhD Film and Screen Studies
Gonville and Caius College



During my undergraduate studies in French and German at the University of Cambridge, I developed an interest in the role of film in the creation of political and ethical discourses. My work was informed by the historical backdrop of annihilating violence symbolised with particular clarity in Berlin,

where I spent an exchange year studying film. These interests, along with my experience as a former serviceman in the Republic of Singapore Navy, informed my writing on wartime visual culture during my MPhil course in Screen Media. Topics I examined in this context ranged from the National Socialist propaganda machine to Marvel Studios' Captain America film trilogy. As this turn implies, the focus of my work has shifted from the Second World War as the high-water mark of physical destruction to the regime of vulnerability inflicted on global society in the "War on Terror". In my PhD work, I aim to examine contemporary "postmodern" war through the lens of screen media, encompassing mainstream cinema as a site of popular legitimisation and critique as well as online video as a readily accessible domain of psychological violence. Through this analysis I hope to contribute to a strategic and ethical understanding of the visual representation of contemporary conflict in popular culture.

FEMALE CIRCUMCISION THROUGH AN AFRICAN LENS

MAMASA CAMARA

Mamasa Camara combines her research on female circumcision with a strong record of activism in women's health in West Africa.



During the summer following her freshman year at Spelman College, she convinced the Vice President of The Gambia, Isatou Njie Saidy, to endorse a conference she had organised on women's health. The conference has been held annually ever since and is televised nationally. It has opened up a space for women to receive critical health screenings, discuss important health issues such as female circumcision and begin to take control of a discussion which is often seen through a Western lens.

Through her MPhil at the University of Cambridge she will continue to study female circumcision in its historical, political and social context in order to understand it better and improve outcomes for women.

Mamasa has a family history linked to health and wellbeing. Her parents were born in The Gambia where her father was a traditional healer, a role that was passed down to him. Although he could not read or write, he really valued education and passed that thirst for learning new things on to Mamasa.

At home, she understood that she had a responsibility to use her position of privilege to improve the lives of those around her, especially women and she has worked extensively in community organisations to further those aims.

She understood that school was one of the only places where she could ask questions and she was particularly interested in history. It was not expected that students in her community would go to college, but a teacher told her about Spelman College and she applied and was accepted, winning a scholarship. She chose to focus on women's health.

She researched how female circumcision is practised in different places and what it means to those who practise it. She decided to organise a conference about female health

in The Gambia in order to gain insight into the African perspective and create a space for mutual and transnational understandings. She started planning it from the US and wrote to the Vice President of The Gambia to get her endorsement. She said there needed to be a conversation about female circumcision in order to enact change.

Mamasa travelled to The Gambia and was extremely persistent, camping outside the Vice President's office, printing out the same letter every day and giving it to security guards. She gave a copy to a relative who is a journalist and it eventually reached the Vice President. She talked to national stakeholders, healthcare professionals, women's groups and the media in order to initiate an interdisciplinary approach to the topic. Just before the conference was due to start Mamasa got a call to say the Vice President wanted to see her and that the event would be televised.

The conference has been held annually ever since and has developed over the years, with a greater emphasis being placed on creating a culture of wellness. Women are less reluctant to share their experiences, says Mamasa, and more are entering hospitals where they had not before. The conference works with local community health centres and has discussed other health issues, such as Ebola.

In 2014 during her third year, she spent a semester in China studying the African diaspora in Asia and how they have created community and wrote an award-winning research paper on the subject. She says: "It created a new level of consciousness and made me more critical of my own country."

She returned to Spelman where her research work focused on Kenyan women during the colonial era and the links between female circumcision, patriarchy and the British political discourse. For her MPhil at the University of Cambridge she will study how historical forces inform contemporary moments in African Studies by examining discourse on female circumcision and its real-world implications. "I want to help fix misconceptions about African history," she says.

**"I want to help fix
misconceptions about
African history."**

Benjamin Cocanougher

USA

PhD Zoology
St Catharine's College



I grew up catching praying mantises and damselflies in rural Kentucky. As an undergraduate at Centre College, I majored in Biochemistry and Molecular Biology; I spent my summers taking care of sick children at the Center for Courageous Kids and doing research in organic chemistry and neuroscience. I matriculated directly to the University of Rochester School of Medicine and Dentistry and completed my first three years of medical school. I then moved to Janelia Research Campus as a HHMI Medical Research Fellow; there I studied the neural and genetic bases of behaviour. As a PhD student in Zoology, I will study adaptive behaviour. All animals integrate information about past experience into future decisions; this is the basis of learning and memory. I am proposing to write a specific memory and read the memory trace in the brain. I will use the fruit fly as a model organism. By understanding mechanisms of memory storage, we can begin to investigate changes in memory formation in disease; this may allow us to develop rational therapies for disorders of memory formation, including autism and Alzheimer's disease. After completing my PhD, I will return to finish my last year of medical school and pursue a career as a child neurologist and neuroscientist, using my lab to better understand the patients I see in clinic.

Krittika D'Silva

Canada

PhD Computer Science
Jesus College



At the University of Washington in Seattle, I majored in Bioengineering and Computer Engineering and worked in a number of research labs in both fields. During my first two years I worked with Joan Sanders to create technology for individuals with lower limb amputations. Subsequently, I joined the Information and Communication Technologies for Development (ICTD) lab and worked with Gaetano Borriello to develop Android applications to improve remote health monitoring and disease detection in low-resource settings. During the summer of 2014, I interned at Microsoft Research India with Bill Thies on the Technology for Emerging Regions team and built a mobile application for citizen journalists in rural India. In 2015, I worked at Google on the Android infrastructure team. I believe phones can be a valuable tool for change and I look forward to continuing research in mobile systems at Cambridge.

Maksim Dadonau

Belarus

PhD Applied Maths and Theoretical Physics
Girton College



Originally from Belarus, I have spent the last four years studying Mechanical Engineering at The University of Warwick, UK. During my undergraduate studies I have become increasingly fascinated by the significance and complexity of Fluid Dynamics and conducted an extensive year-long experimental research, which has inspired me to pursue a PhD in this subject. In my doctoral studies I will be addressing the topic of double-diffusive convection. This fundamental phenomenon has a wide range of applications in various engineering and natural processes and holds particular importance in environmental studies, such as geology and oceanography. My objective is to use the latest developments in numerical modelling and experimental techniques to complement relevant existing findings with accurate comprehensive data, enhancing our understanding the phenomenon. In doing that, I am hoping to contribute towards the development of our understanding of the global environmental processes and assist in tackling the challenges associated with climate change. With an ambition of being at the forefront of academic research I am eager to collaborate with the world's best minds at Cambridge University whilst building a professional global network of future leaders committed to improving the lives of others.

Zachary Dannelly

USA

MPhil Technology Policy
Girton College



My passion for technology began as a junior at Christian Academy of Louisville. All ten of us in the AP Computer Science class could take a unique path to the solution and still not have exhausted all the options. This limitless world of possibilities inspired a young boy who wanted to make some binary contributions. Looking to pursue this drive while also continuing my family's nine generations of contiguous military service, I looked towards the US Naval Academy for my undergraduate foundation. On major selection day, I rallied to the calling, and I joined the first ever group of Cyber Operations majors. This interdisciplinary degree offers a technical foundation in traditional computer science courses, while appreciating the importance of additional considerations within the domain by including policy and human factors classes. I plan to further develop my holistic exploration into this emerging cyber domain by studying for an MPhil in Technology Policy at the Judge Business School, University of Cambridge. This education will provide the critical international aperture and public-private sector knowledge necessary to best fulfil my naval career as an Information Warfare Officer actuating US cyber directives.

Ritankar Das*

India

PhD Chemistry
Corpus Christi College



I have long been interested in alternative energy research as a method to find cost-effective sources of energy to replace the global need for fossil fuels. At Cambridge, I am planning to continue my research work from my undergraduate studies in the area of cellulose solvation, in the Wales Lab.

Biomass contains abundant amounts of cellulose as crystalline microfibrils. A limiting step to using cellulose as an alternative energy source, however, is the hydrolysis of the biomass and subsequent transformation into fuels. My project at Cambridge aims to find alternative solvent mixtures that are less expensive and are more environmentally benign than the currently used ionic liquids, through the use of computational methods such as all-atom molecular dynamics simulations.

*Deferred from previous year

Karly Drabot

Canada

PhD Psychology
Downing College



Finding creative, effective ways to reduce inequality and improve wellbeing makes me tick. I have been fortunate to pursue this interest through varied experiences such as co-ordinating and participating in international volunteer trips, teaching hip-hop dance classes, and co-organizing

a national leadership conference. As an undergraduate psychology student and research coordinator at UBC, I was able to further explore this passion through the lens of research. From investigating the effects of gender stereotyping and stereotype threat on perceived leadership aptitude, to designing a knowledge translation study to improve the health of men who have sex with men, to conducting community-based research to identify innovative methods of care for individuals with life-limiting chronic illness, I developed a fascination for the profound impact research could have on individuals and populations at-large. Most recently, during my MPhil at Cambridge, I examined the differential relationships between domains of gender typicality and psychosocial wellbeing. The aim of my PhD is to continue studying the gender continuum and wellbeing and to move these findings into practice and policy, with my ultimate goal to help develop evidence-based programs to promote gender equality and protect human rights.

Atticus Deprospo*

USA

MPhil Multi-Disciplinary Gender Studies
Darwin College



I received my BSc degree in Industrial & Labour Relations from Cornell University in May 2015, graduating with honours. My senior honour thesis was on LGBTQ inclusion in collegiate athletics, where I created a survey to measure the current climate surrounding LGBTQ inclusion in NCAA

athletic departments. I was a member of the Cornell Varsity Men's Soccer Team for four years, helping them win an Ivy League Title in fall 2012. I am a co-founder and student-athlete representative on the LGBT committee for the National Soccer Coaches Association of America (NSCAA). Previously, I worked in Florida and Washington D.C. as an intern for Senator Marco Rubio. I also interned at the Supreme Court of the United States in 2015. I wish to pursue a career as a public servant in the federal government and as an inclusion ambassador for professional sport leagues. I am honoured to be joining the Gates Cambridge community, made up of scholars working to improve society all around the world.

*Deferring to 2017

Ryan DuChanois

USA

MPhil Engineering for Sustainable Development
Darwin College



With a desire to address water concerns around the globe, my undergraduate degree in Civil Engineering at the University of Arkansas provided water-related research and service opportunities in nations such as South Africa, India, and Ethiopia. These experiences continuously reminded me that

many people have limited or contaminated water supply despite the fact water is a fundamental physiological need. I quickly found a passion and personal obligation to utilise my career to allow more people to have access to safe, sustainable, and affordable water in both underdeveloped and developed areas. My undergraduate research has included evaluating point-of-use water treatment technologies for developing communities, assessing rainwater harvesting methods for irrigation, and benchmarking water quality with respect to endocrine disrupting compounds in water reuse. While at Cambridge, I will study and research the economic, social, and political factors that inhibit proper water technology implementation and how to address these concerns for the purpose of gaining sustainable potable water supply. Specifically, my research interests lie in practices such as desalination, water recycling, and rainwater harvesting.

BRIDGING THE GAP BETWEEN ACADEMIA AND INDUSTRY

KAREN DUFFY

Cambridge has featured strongly in Karen Duffy's early scientific career. Not only was she born in Cambridge, Massachusetts, but she currently works for a biotechnology company there and is about to begin a PhD at Cambridge, UK in the autumn.



Karen will do a PhD in Molecular Biology under the supervision of Philipp Holliger. Her research project involves expanding upon the chemistry of DNA and RNA to develop novel synthetic genetic polymers. "There are many new therapeutic modalities involving nucleic acids. We want to develop foundational technology for synthesising, replicating and evolving synthetic genetic polymers. I hope that these new biopolymers will have advantageous properties for targeting disease," she says.

Having worked in the biotech industry for the past two and a half years – in AstraZeneca and now at a small biotech start-up, she is keen to bridge the gap between academia and industry.

During her time at AstraZeneca she became involved with her Boston Biotech Connection, a non-profit organisation that works to bring together academia and industry. Karen has become one of its event coordinators and has been developing ideas for events as well as working on advertising and marketing. She also attended the GapSummit 2014, Global Biotech Revolution's inter-generational leadership summit in biotechnology, after being selected as one of 50 leaders of tomorrow based on an essay she wrote about the challenges facing the biotechnology industry.

The summit was held in the UK – in Cambridge – and she found the atmosphere intellectually stimulating and inspiring. She returned to the US where she applied for her PhD.

EARLY YEARS

Karen was always interested in science, but it was when she started university that she developed a real passion for it. She opted for Cornell where she majored in biology. In her second year she transferred to biological engineering, drawn by an interest in applying science to concrete problems.

From the start of her undergraduate degree she was doing research, working in a microbiology laboratory in her first year on a bioremediation project. In her second year she worked in a biomedical engineering laboratory with a focus on protein engineering. There she learnt about research techniques and was given her first independent project, engineering a protein to bind tighter to its ligand. Over the course of her degree, Karen spent one summer on a German exchange programme working on a cell biology project and another on an industry internship in Boston. That gave her a different perspective on science.

Following her undergraduate degree, Karen began her masters in engineering a semester early. She worked in a research group designing and developing a biosensor device. The aim was to create a device which would quantify a peptide in the blood of patients undergoing gastric bypass surgery. This would help the group to learn more about the potential for the peptide to serve as a biomarker.

ASTRAZENECA

After she finished her masters, Karen was accepted onto AstraZeneca's rotational research and development programme for recent graduates. She did three different eight-month rotations in oncology and travelled to the UK and Sweden, developing a good network of professional contacts. Her research ranged from developing screening assays to using CRISPR technology to generate genetic knock-outs – a genetic technique in which one of an organism's genes is made inoperative.

She was keen to get some experience in industry and says she likes the sense that, in industry, you can directly help patients through developing new treatments.

When the AstraZeneca programme finished, Karen transitioned to Unum Therapeutics, a small biotechnology company in Cambridge, Massachusetts. The company develops therapies that activate patients' own immune systems to fight cancer.

After completing her PhD she hopes to return to the pharmaceutical and biotech industry and to find a research position in the cancer therapy field.

Karen Duffy

USA

PhD Bio Sci @MRC Lab for Molecular Biology
Churchill College



I grew up just outside Boston and studied biomedical engineering at Cornell University. Since graduating two years ago, I've been working in the pharmaceutical/ biotech industry, where I've experienced first-hand the impact that great scientists can have in the lives of patients. I am

excited about the potential of entirely new therapeutic modalities to bring step changes in our ability to prevent, treat, and cure disease. At Cambridge, I will undertake a PhD in molecular biology, where I will expand upon the chemistry of DNA and RNA to develop novel synthetic genetic polymers. Through this chemical diversification, I hope to engineer new biopolymers with advantageous properties for therapeutic applications. I am honoured to join the diverse, vibrant, and compassionate Gates community.

Georgiana Epure

Romania

MPhil International Relations and Politics
Christ's College



As an Undergraduate Research and Leadership Scholar at the University of Leeds, I developed an interest in mass atrocities prevention and the responsibility to protect (R2P) populations from genocide, ethnic cleansing, war crimes and crimes against humanity. I keep thinking what would have happened to me had my

mother lived in Rwanda when I was born in April 1994, and not in Romania. Unfortunately, one does not need to look back in history to learn about humanitarian crises. As a research assistant at the Intervention and International Society Research Cluster at Leeds, I examined on-going international crises. My research focused on the international community's responsibility to assist states, such as the Central African Republic, to protect their populations from mass atrocities, and on the post-conflict reconstruction in Libya. In 2015, I founded the first R2P Student Coalition in the UK and The R2P Student Journal. As an International Relations student at Cambridge, I seek to analyse the responsibility to rebuild states that manifestly fail to fulfil their responsibilities, as a way to advance the creation of responsible sovereigns. I am also passionate about gender equality and education. I am a member of the Association for Liberty and Equality of Gender in Romania, where I focus on advancing comprehensive sexuality education in schools, and a Women Deliver Young Leader Fellow.

Sagnik Dutta

India

PhD Politics and International Studies
Corpus Christi College



As a journalist in India, I witnessed a tumultuous period of upheaval in the polity and the economy. Reporting on the political economy, minority rights, and the relationship between law and society, my work involved travelling around Western Uttar Pradesh, Delhi, and Rajasthan. I also wrote extensively

on the Supreme Court of India at a time when the stance of the judiciary vis-à-vis corruption in the corridors of power was at the forefront of public discourse. My reportage on the movement for personal law reform in India led by community initiatives aroused my intellectual curiosity in the subject. I had earlier engaged with the issue of the relationship between liberalism and religious identity while working with a human rights collective called Femine Ijtihad. As a post-graduate student at the School of Oriental and African Studies, I was also engaged in a research project on madrasa education and ideas of citizenship in Pakistan. My PhD will look at the relationship between religion and constitutionalism in the context of Muslim personal law reform in India. I propose to combine a discourse analysis of the judgments of the Supreme Court with an ethnographic study of sharia courts run by women in Mumbai to examine the discursive constitution of religion and a liberal "rights" regime.

Olga Fabrikantova

Russia

PhD Theology and Religious Studies
Trinity College



Born and bred in Moscow, I moved to Cambridge to read for the Theological Tripos, followed by the Hebrew Bible MPhil. It did not take me long to fall in love with the exhilarating environment at Cambridge, and I am excited and honoured to be joining the Gates Cambridge community for my PhD. My

interests centre on the literature, language, history, and religion of ancient Israel from its origins to the Second Temple Period. During my undergraduate studies, I was particularly drawn to the power of the Hebrew narrative to capture the complexities, ambiguities, and uncertainties of the human existence and became interested in narrative ethics. As part of my MPhil, I have been able to explore the world of biblical literature further, delving into the literary phenomena known as inner-biblical exegesis and allusion. For my PhD, I hope to build upon this foundation and investigate the plurality of perspectives on truth and deception in the Hebrew Bible in the context of interpersonal relationships. Far from being relics from a distant past, I believe these perspectives have the potential to inform our contemporary ethical inquiries. As a candidate for ordained ministry in the Church of England, I am passionate about sensitive and well-informed religious leadership.

Joshua Feinzig

USA

MPhil Criminology
Pembroke College



As an undergraduate studying Ethics, Politics and Economics at Yale University, I focused on the intersection of criminal justice and political theory, with a particular emphasis on the intellectual history of punishment and state justifications for mass incarceration. I seek to integrate political and moral philosophy into criminology, in the hopes of imbuing criminal justice policymaking with new theoretical considerations to further the development of alternatives to incarceration across the world. In addition to working on criminal justice reform at the state level, I have served as a city commissioner in New Haven (Connecticut) and co-founded an alternative regional juvenile justice court system grounded in balanced and restorative principles. I believe that to rebuild public trust and reinvigorate civic possibility, American cities must develop restorative criminal justice systems by drawing upon local community values and mores of inclusion. At Cambridge, I seek to continue applying social scientific frameworks to develop new alternative diversionary models, while also considering how criminal justice policy normatively shapes ideas about race and citizenship. I'm honoured to be joining the Gates Cambridge community and working with others committed to social justice and the public good.

Jessica Fernandez De Lara Harada Mexico

PhD Latin American Studies
Emmanuel College



Born in Jiutepec and raised in Mexico City, to a father whose ancestors were field marshals in the Mexican Revolution, and a mother whose grandparents emigrated from Japan, at the turn of the 20th century. I grew up between many layers of difference, and the constraints of a lower middle class family. I was an ITESM Leadership of Tomorrow scholar, graduated with a First in Law from UNAM, and I was a mobility scholar at UC Irvine. Gradually, I became aware that, as a woman, having a 'native' appearance, being far from wealthy, and receiving public education posed a hindrance to access opportunities. Still, I worked at prestigious law firms, and served as Head of Department and Deputy Director advising high ranking officials at the Federal Government. I then embarked on travels across Latin America, and worked for the Ministry of Foreign Affairs in Addis Ababa, Ethiopia. I obtained a distinction at UCL for my MA examining the making of race through culture and the impact of racism on social stratification, inequalities, and nation building in Mexico, Latin America, and beyond. For my PhD I will delve deeper into these issues through the lens of international migration from Asia to the Americas from the late 19th century to the present.

Amelia Fitch

USA

MPhil Biological Science (Plant Sciences)
Clare College



I grew up in Astoria, Oregon, a small pocket of beautiful coastal and temperate rainforest in the Pacific Northwest. During my undergraduate years at the University of Oregon, I worked on two majors, Biology and Environmental Science because I couldn't choose between the two distinctly different departments. I have both a passion for a mechanistic understanding of the natural world and conservation of these phenomena. During my MPhil in Biological Science, I will pursue this amalgamation of conservation and biology through research in aquatic ecosystems. I seek to understand the effects of land management on the diversity of dissolved organic matter and microbial function. Microorganisms and their functions play a key role in ecosystem services. I hope to illuminate the potential effects of land management on aquatic ecosystem services. I am honoured to receive the Gates Cambridge scholarship, and excited to work with the research group, Ecosystems and Global Change.

Zachary Fitzpatrick*

USA

PhD Medicine
Clare College



My undergraduate career at Louisiana State University consisted of a unique and interdisciplinary array of experiences in medicine, science and public health, which have fuelled my aspirations in making a meaningful impact in the rare diseases sector. Through clinical experience in chronic pain management as a phlebotomist and electrocardiogram technician, I developed a passion in serving underrepresented patient communities with unmet medical need. I've had the opportunity to investigate primary immunodeficiencies and the development of gene-based therapies for debilitating genetic disorders at The Children's Hospital of Philadelphia, The Massachusetts General Hospital and Harvard Medical School. This work has been greatly complemented by my studies in genetics and cancer immunology at the Pasteur Institute. With the intention of fostering evidence-based policy to improve healthcare access for individuals suffering from rare diseases, I have explored economic, ethical and public health-related obstacles in orphan drug development and distribution. I am honoured to begin my scientific journey at Cambridge, where I will investigate the molecular pathogenesis of and therapy development for lysosomal storage disorders.

*Deferred from previous year

DUAL IDENTITY

LARRY HAN

Larry Han has always felt he had a dual identity – as Larry the top golfer and Larry the top student.

He was a world-ranking junior golfing champion until an injury hampered his ability to play. Since then he has shown equal dedication to his research, working most recently in Malawi on the most promising malaria vaccine to emerge to date. It is therefore fitting that the research project Larry will be working on at Cambridge next year involves looking at the dual identity of Cambridge's local and world class research hospital, Addenbrooke's.

Larry will be doing an MPhil in Strategy, Marketing and Operations, working on the reorganisation of hospital care at Addenbrooke's, addressing how the hospital combines catering to patients requiring standard care and to those with more complex symptoms who require expert input.

He has deferred his MPhil for a year so that he can do a one-year Schwarzman Scholarship in China in public policy, once again focusing on public health.

GOLFING AND STUDYING

Larry, from North Carolina, spent much of his childhood on his passion for golf. He ranked high in many junior world championships and when he was 13, he won the American Junior Golf Association All-Star tournament.

At the same time he was a very able student. "I had this dual identity," he says, "and it was never clear when I would have to make a decision either way. I felt I could do both and succeed in both."

In 2008, though, when he was just 14 he developed a cyst on a nerve in his right wrist and had to have surgery to remove it. The cyst returned in 2011 and he lost some sensation in his right hand after further surgery. It became enormously frustrating playing against and losing to people he had once beaten.

Moreover, in his final year at high school he was offered the Morehead-Cain Scholarship to attend the University of North Carolina. "It was all that I wanted in my studies packaged into one, but it marked the end of my aspirations with golf. It was the right time. It opened a new door," says Larry.

INFECTIOUS DISEASE

Although he began as a chemistry major, he soon became interested in infectious disease. In his first summer vacation, as part of his scholarship programme, he took part in the



UNC Project-China, a project of the University's Institute for Global Health & Infectious Diseases aimed at improving health outcomes in China. He worked for 13 weeks in an HIV/STD clinic in Guangzhou, south east China, with a heavy focus on health prevention.

His second summer, courtesy of his scholarship programme, was spent at the London School of Hygiene and Tropical Medicine doing diagnostics testing for HIV, TB and malaria.

At UNC he has recently completed a research thesis working on phase three randomised control trials in Malawi, one of 11 study sites in Africa for the most advanced malaria treatment, the RTS,S vaccine. It is now in its fourth phase which will follow over 1,600 children given the vaccine over a period of four years. Larry says: "Over 400,000 children die every year in sub-Saharan Africa as a result of malaria. The vaccine appears to have an efficacy of 40–50%. I have spent much of my senior year working on this and will continue to do so while I do my master's. It's a testament to how when academics, policymakers and the private sector in the form of GlaxoSmithKline and the Bill and Melinda Gates Foundation come together we can have a greater impact."

Larry graduated in Public Health, Biostatistics and Chemistry this summer. When he finishes at Cambridge he will return to the US to Harvard where he will do a PhD in Biostatistics. He continues to play golf, but mostly with friends and mentors, including professors.

Nils Flodén

Sweden

PhD Chemistry
Christ's College

Born and raised in Sweden, I moved to the UK in 2012 to study chemistry at Imperial College London. I was immediately captured by the science of constructing organic molecules. In the sense that organic chemistry is often about constructing things, it is somewhat similar to engineering but with a fundamental twist – we can't see anything that we make. This makes the field really exciting and having done research in various areas of chemistry at Stockholm University, Imperial College London and the University of Cambridge, my PhD will focus on the functionalisation of carbon-hydrogen bonds. This area holds huge promise since these bonds exist in essentially every organic molecule important to human life and the ability to transform them will likely prove crucial in the development of drugs and functional materials in the future. My research will also make use of automated, computer-controlled technology which is currently transforming the chemical science as we know it. I am absolutely thrilled to be able to carry out this research in Cambridge over the coming years and to join the Gates Cambridge community of scholars from all over the world.

Emma Glennon

USA

PhD Veterinary Medicine
Churchill College

I am fascinated by the interconnectedness of humans, pathogens, animals, and our shared environments, especially how we perturb the balance between them to drive or inhibit disease. For my undergraduate thesis in Ecology and Evolutionary Biology at Princeton University, I modelled the links between long-term climate variation, human behaviour, and cholera in Bangladesh. After graduation I travelled to India on a Fulbright Research Grant to study antibiotic-resistant infections, a public health threat emerging primarily due to human policies and behaviours. For my PhD with the Disease Dynamics Unit at Cambridge, I will study the ways that urbanisation and other forms of anthropogenic change affect the population dynamics of fruit bats and thereby drive spillover of bat-borne viruses (including Nipah and Hendra viruses, Ebola and Marburg viruses, and rabies). In doing so, I hope to help understand, and potentially mitigate, risk of these lethal zoonoses before they reach human populations. Global health research is most effective when it is interdisciplinary, so I am thrilled to have the opportunity to study with and learn from scholars of such diverse backgrounds.

Ben Geytenbeek

Australia

PhD Physics
Darwin College

I grew up in the Adelaide Hills in South Australia. At high school, I became involved with my local observatory. There, I began to realise my passion for trying to understand the mysteries of the universe; what is the universe made of, and how did it come to be today? As an undergraduate, I studied a Bachelor of Science (Advanced) with Honours, majoring in Physics at the University of Adelaide. In my final year project, I investigated the effect of dark matter in the sun. I have also been passionately involved in initiatives aimed at improving the lives of university students, such as the Adelaide University Sciences Association, and the Australian Government Office of Learning and Teaching. My goal at Cambridge is to help shed more light on the contemporary problems in theoretical physics. In particular, I will be investigating extensions to the Standard Model of particle physics to explain phenomena such as gravity and dark matter. Through experiments like the Large Hadron Collider and astrophysical and cosmological observations, we can probe for new physics that will provide deeper understanding of our universe and drive technological innovation for generations to come. The Gates Cambridge scholarship will enable me to be at the forefront of groundbreaking research such that I can make a valuable contribution to the knowledge of humankind.

Jake Glidden

Australia

PhD Physics
Trinity College

My interest in Physics was piqued in 2008, when I was selected to represent Australia at the annual International Physics Olympiad in Hanoi, Vietnam. In 2009, I moved from my home state of Queensland to Canberra, where I studied at the Australian National University. I read for the Bachelor of Philosophy (Hons) [Science] – a flexible, yet demanding undergraduate research programme – and completed several individual research topics during this time. I also participated in an exchange at Universität Bonn, Germany, where I studied Masters-level courses in many-body quantum physics. After returning home to Australia, I completed my research project and was awarded first class honours in Theoretical Physics. My MPhil research at the University of Queensland followed naturally, aiming to prototype an ultra-sensitive rotation detector based on the interference of cold atom condensates. My project for the PhD in Physics sees a slight change of pace to more fundamental physics. I will explore the role of interactions between atoms in the transition from dilute gas vapour through to condensate. Understanding the nuances of these interactions is key to developing sophisticated technologies that could one day supersede laser-based counterparts for inertial and field sensing.

Larry Han*

USA

MPhil Strategy, Marketing and Operations
Darwin College



As the son of immigrants from China, I had always wanted to reconnect with my roots and study at a Chinese institute of higher learning. Through the Schwarzman Scholars program, I studied public policy and health economics at Tsinghua University in Beijing, China. Previously, I focused my undergraduate

studies in biostatistics and infectious diseases at the University of North Carolina – Chapel Hill. A Morehead-Cain Scholar and Phillips Ambassador, I co-lead an NIH-funded randomized controlled trial to improve sexual health delivery in Guangzhou, China. With support from the Goldwater Scholarship, I completed an honours thesis on the efficacy of the RTS,S malaria vaccine among Malawian children. I am incredibly excited to complete my MPhil through the Judge Business School with Dr. Stefan Scholtes, where I will study healthcare management and hospital reorganization. In the future, I aim to complete a Doctorate in Biostatistics and collaborate with global institutions to advance the field and develop tools to improve healthcare delivery. My interests include; golf, basketball, tennis, reading history, debating politics

*Deferring to 2017

Marisa Henry

Canada

MPhil Engineering for Sustainable Development
Pembroke College



Born in Canada, but raised primarily in the suburbs of Houston, Texas, I attended Purdue University and graduated with a bachelors of science in environmental and ecological engineering. As a student at Purdue, I led a team working to address water scarcity in the community of Endallah, Tanzania. Beyond

applying my technical, engineering knowledge, this project made me aware of the complex, multidisciplinary challenges in creating and maintaining sustainable water systems around the world. Taking up classes and other learning opportunities in subjects including economics and diversity studies, I have strived to incorporate interdisciplinary perspectives into my work. At Cambridge, I plan to further my interdisciplinary studies by pursuing the MPhil in Engineering for Sustainable Development and researching how economics can be incorporated in engineering to design system strategies for sustainable water resources globally. Outside of my academic interests, I enjoy running, hiking, travelling, music, community involvement, and coffee. I am so excited to join the Gates Cambridge community, and look forward to building relationships with other scholars who are working to make a difference in the world.

Nathan Hawkins

UK / New Zealand

MPhil Philosophy
Gonville and Caius College



Born in the UK, I emigrated to New Zealand at the age of 25, living there for 10 years. While there, I studied a BA with a double major in philosophy and mathematics, as well as an MA in philosophy. As an undergrad I was struck by the way people's metaphysical assumptions were brought to bear on all areas

of philosophy; in particular, beliefs regarding the full supervenience of human experience on fundamental physical laws/particles. This assumption undermines "common sense" beliefs regarding free will and consciousness, among other things. It became clear to me that to defend human agency I would eventually require a metaphysical structure that was capable of supporting irreducible higher-level properties. In preparation for this, my postgraduate research was directed toward understanding, first, David Lewis's Modal Realism, and second, Timothy Williamson's Necessitism. Despite the fact that both of these metaphysical structures build up their ontology from smaller pieces, they also affirm an unchanging logical superstructure in relation to which we must place our "actual world". Further study at Cambridge will revolve around the relatively undeveloped idea of metaphysical Monism: a claim that the whole is more fundamental than its parts. It is my belief that to understand higher levels of reality we must place it in the context of the whole rather than see it as a sum of its parts.

Annalise Higgins

New Zealand

PhD History
Trinity College



As a historian, I thrive on imagining the past and asking the question "why?". Growing up in New Zealand surrounded by many stunning landscapes, I have developed a strong interest in how people think about the natural world. These interests were inspired and refined by my studies at the

University of Auckland. At Cambridge, I will be researching intersections between the environment and diplomacy, with a particular focus on the ocean. I am interested in treating international diplomatic treaties as texts which must be considered within their environmental contexts, rather than being mentally sequestered within the confines of diplomatic meeting halls. My previous research has focussed on public perceptions of international diplomacy, notably neutrality and the 1899 Hague Peace Conference, in the late 19th century. I have become fascinated by the challenge of trying to understand how people have grappled with ideas about their world and how it functions. Environmental challenges are particularly salient in the present, and I believe that an integral part of working towards international cooperation in addressing environmental challenges is developing historical understanding of how the inherently international challenges presented by the environment have been confronted in diplomatic contexts.

PEACE FROM THE GRASSROOTS UP

ALICE MUSABENDE

Alice Musabende wants to give the people affected by war and genocide a voice in peacebuilding efforts. Too often, she says, their voices are not heard, their stories are not told and they are not able to contribute to discussions about how peacebuilding might happen.



Her PhD in Politics and International Studies will investigate how international, national and local politics interact in the context of post-conflict peacebuilding, and how these political dynamics affect local people's everyday lives.

Alice, who lost her entire immediate family in the Rwandan genocide against the Tutsis of 1994 in which an estimated 1,000,000 people were murdered, feels it is vital that there are more African researchers investigating the aftermath of violence and conflict on the continent. "I want to be part of a movement of African researchers who bring African voices to the table," she says.

Alice was born and raised in Rwanda. A journalist by profession, she has written powerfully about the profound impact the genocide had on her and those around her and the longing for justice.

She credits two women with helping her focus on the future: her aunt and a teacher at the Catholic boarding school her aunt sent her to who was the first person to realise she was suffering from PTSD and helped her through it. Her aunt, whose husband was also murdered, looked after around 10 children from the wider family, all of whom were suffering mental health problems as a result of the genocide. "The only reason I made it this far is because my aunt did not let me fall," says Alice. "She always behaved as if there was no choice but to move forwards. I was very lucky to have women like her around me who loved me and made me strong enough to continue."

"I want to join a growing movement of Classicists in opening investigative inquiries into sometimes painful issues of identity."

In 1999, Alice was admitted to the National University of Rwanda's journalism school. She was determined to tell people's stories. In her third year she did an internship with a local USAID-funded project working to rebuild Rwandan coffee farming through bringing different ethnic groups together. She stayed for four years. When she left she had put together the first outline of a radio programme for coffee farmers to spread information about what was happening in different parts of the country.

Ten years ago she moved to Canada to do a masters in journalism at Carleton University which gave her the time and space to begin to heal. While doing her course she met her now husband so she stayed on in Canada after her course and found work as a political reporter.

She wanted, however, to dig deeper than journalism allows. To do the PhD she wanted to do she had to first do a master's in international development so she enrolled at Dalhousie University where she focused on international peace building.

At Cambridge she will be supervised for her PhD by Dr Devon Curtis. Alice, who has a baby and a three and a half year old, says having her children has also given her extra motivation to do her PhD. She says: "Once I had a child I felt a renewed sense of obligation to push myself to see how far I could go. Being a genocide survivor, I feel a deep sense of responsibility to honour the chances and opportunities I have been given."

She adds that her sights are firmly on the future: "I am so lucky to be alive and to have all these opportunities. I feel I have to keep going for everyone else who did not get the chance to be here, for my family and siblings, for all the people whose lives were cut so short by the genocide. I am doing this to honour them. That is my inspiration and the force behind everything I do."

Andre Holzer

Germany

PhD Plant Sciences
Christ's College

Our world is facing many threats including pollution, climate change, world hunger, etc. It is my conviction that decisive action must be taken in order to influence how the world will change and to provide an acceptable future for our descendants.

Thus, my passion for natural sciences is a mission to understand nature's bigger concepts, to develop new techniques and applications that will improve the future. I was born in a small town in Germany and have had a strong interest in natural sciences since school. As a BSc and MSc student studying Molecular Biotechnology at Heidelberg University, I gained profound education in the fields of modern life sciences and obtained research experience in the interdisciplinary areas of bioinformatics, biophysics and drug discovery. I joined many international labs and conducted studies covering topics such as optical nanoscopy, cancer research, bacterial signalling and algal ecology. Subsequent to our recent discovery of vitamin B12 remodelling in algae, my PhD at Cambridge will continue existing work on algal-bacterial interaction. I aim to improve the understanding of algal metabolism and bacterial signalling in order to gain fundamental insights in B12 cycling, algal-bacterial symbiosis and complex microbial ecosystems which is essential for many biotechnological purposes such as the production of renewable energy sources or B12 supplying medicine.

Emma Houiellebecq

Canada / UK

MPhil Engineering for Sustainable Development
St John's College

During my undergraduate degree in Civil Engineering at the University of British Columbia Okanagan, I became increasingly interested in the engineer's role in addressing complex global challenges, such as the impact of climate change on urban environments and the implications for sustainable

development. I was able to gain first-hand international experience in development projects during internships in Swaziland, Rwanda, and while designing water systems in rural Uganda. For the past two years, I have worked in Vancouver, as a structural engineer with a firm at the forefront of sustainable and innovative design in timber engineering. Additionally, I have held the elected position of Co-President of the Engineers Without Borders Vancouver City Network for 18 months, providing the opportunity to engage in wider discussions among engineers on what it means to be a "Global Engineer". I now look forward to applying these experiences to my MPhil at Cambridge, exploring how engineers can strengthen the resilience of urban environments to better withstand climate-induced disasters. We have seen how rapid urbanisation in many developing countries is increasing the vulnerability of communities and limiting their ability to respond to disaster. Through my research, I intend to explore how engineers can shift to a resilience-based mind-set that understands the dynamic nature of urban systems.

Megan Hough

USA

MPhil Nuclear Energy
Lucy Cavendish College

Growing up in a military family, I knew from a very young age that I wanted to serve in the military. I followed this dream and my passion for engineering to the United States Naval Academy where I studied nuclear engineering. Upon graduation, I was commissioned to serve in the submarine

community. I am fortunate enough to continue my education at Cambridge University where I plan to study Nuclear Energy. My research interests include developing new technologies to improve the reliability, efficiency and safety of nuclear reactors, as well as promoting engineering education. In my career, I hope to combine technical and operational expertise learned from the operation of nuclear power plants in the submarine environment to promote the safe use of nuclear energy as a reliable green technology. As a woman in the nuclear engineering field, I hope to inspire girls to pursue science, technology and engineering careers. I am incredibly honoured to be a part of the Gates Cambridge scholar program and work together with young leaders dedicated to serving others.

Yue-Yi Hwa

Malaysia

PhD Education
St Catharine's College

I grew up surrounded by secondhand books in a variety of small Malaysian towns. During secondary school, I got a scholarship to study in Singapore; which led to a BA in political economy in the U.S. and an MPhil in comparative government at the University of Oxford. After that, I taught English in a high-

need secondary school through Teach For Malaysia, seeking classroom experience and a re-immersion in my home country. Besides student epiphanies and classroom silliness, one of the greatest gains from those two years was the realisation that teachers' relationships with their managers are pivotal to their classroom practice, and that such relationships are strained in most Malaysian schools. Hence my PhD project: a comparative study on how to keep teachers accountable without triggering the blame games that damage student outcomes. Through this research, I hope to acquire expertise in education policy. I want to help young Malaysians acquire greater mobility, alongside the wisdom to use that mobility well.

Alanna Just

Canada

MPhil Medical Science (Psychiatry)
Newnham College



The brain is an enigmatic organ comprised of more connections between its neurons than stars in our galaxy. It was the imagery this statement evoked, and the ensuing implications, that first inspired me to pursue a double major in Neuroscience and Philosophy of Mind at Quest University Canada. As my interests evolved, they came to encompass psychiatric illness and substance-use disorders in particular. For my Bachelors thesis, I conducted graduate-level research on adult neurogenesis and morphine addiction at the University of Texas Southwestern Medical School. Since my undergraduate, I have endeavoured to diversify my experiences and broaden my perspectives, travelling to remote communities in Siberia, guiding expeditions in Mongolia, and volunteering on medical pilgrimages in Nepal. Currently, I work as a research assistant at a women’s medical clinic, and serve on the Board of Directors of a non-profit organisation in Vancouver. Above all, these seemingly disparate opportunities engendered in me a commitment to improving the lives of others. It is this commitment, along with my persistent passion for the mind that led me to the MPhil at Cambridge where I will conduct research on vulnerability and resilience in substance-use disorders.

Cansu Karabiyik

Denmark

PhD Medical Science @ CIMR
Pembroke College



I completed my BSc and MSc in Biomedicine at the University of Southern Denmark, where I developed a great fascination for neuroscience. Therefore, I chose to conduct my BSc thesis in a neurobiology lab working on a treatment for stroke. During my MSc degree, I had the good fortune to study at both UCSD and in Portugal. Following this, I decided to spend a year gaining additional research experience. I came to Cambridge in July, 2015 to work as a research assistant in Prof. David Rubinsztein’s lab. Here, I had the opportunity to combine cell biology with neurobiology and learned that understanding cell mechanisms creates options for treating severe diseases. Currently, there are no effective treatments for neurodegenerative disorders. During my PhD, I will focus on the cellular degradation mechanism, autophagy. Induction of this pathway has the ability to clear the toxic aggregates that are the hallmarks of neurodegeneration in disorders such as Parkinson’s disease. I hope that this will bring us closer to treating these devastating diseases that leave individuals impaired and dependent. I am excited to undertake my PhD in such a dynamic and innovative environment and to join the diverse and compassionate Gates community.

**Kasun Kariyawasam
Katukoliha Gamage**

Sri Lanka

PhD Engineering
Churchill College



I was born in a village surrounded by a mountain range covered with lush vegetation and serene beauty. As a kid I was mystified by an old narrow steel suspension bridge, which bounced and shook when people crossed. I used to spend hours trying to explore the secret behind it, leading to the question “Is this structure safe?”. The same question arose in my mind when I saw many large bridges in the hill capital of Sri Lanka, where I had my secondary education. I started finding an answer to my question with the design techniques learned at the University of Moratuwa as a Civil Engineering undergraduate. I was attracted to Structural Health Monitoring (SHM) of bridges which can assure safe and economical use of such vital elements that would be the backbone of the overall infrastructure. My main goal at Cambridge is to develop an improved, but cost effective multi-agent system for effective bridge SHM. The distributed, collaborative decision making ability of this system has the potential to immensely enhance the resource efficiency while making damage diagnosis and localisation very effective. I look forward to being part of the Gates Cambridge community and driving change in the field of structural safety for the benefit of the masses.

Emily Kassie

Canada

MPhil International Relations and Politics
St John’s College



As an investigative journalist and documentary filmmaker, my work has sought to spotlight social justice and human rights issues. For the last two years I have worked as a multimedia reporter and the creative director of the Huffington Post’s long form magazine Highline. There, I covered major global and American issues from ISIS and the refugee crisis to police brutality, corporate corruption and sexual assault. At Brown University, I studied politics, film and journalism with a focus on East Africa culminating in my documentary, I Married My Family’s Killer, on intermarriage in post-genocide Rwanda. My degree in International Relations at Cambridge will examine early interventions and crisis identification, specifically investigating the case of Burundi. Through my research I will seek to understand incentives for preventative actions that could ultimately help to deter humanitarian crises. With this degree and my experience in multimedia journalism, I plan to help governing bodies make informed choices that protect civilians and promote long-term regional stability. I am thrilled to join the diverse and expert minds of the Gates community.

RESEARCH WHICH CHANGES LIVES

CAMILO RUIZ

Camilo Ruiz's desire to produce research which has a direct impact on people's lives is motivated by his experience growing up with one foot in the US and another in Colombia, where he was born.

From an early age, he was very aware of the vast difference in opportunity open to people in rich countries compared to those in poorer ones.

Over his student years he has constantly moved around different research projects, aiming to get as much experience in different disciplines and different techniques to enable him to create treatments which will make a difference to large numbers of people.

Two of those projects have centred on medical devices which have won huge plaudits and awards, giving him a taste of the possibilities that a combination of different scientific approaches can have on treating disease.

Camilo began his life in Colombia, but his family moved to the US when he was four as a result of rising violence and domestic terrorism.

He returned every year to see his extended family and he says that meant that, though he grew up in the US, he retained a Colombian perspective.

In high school he was a magician and was asked to perform in an orphanage in Colombia one Christmas. "It shook me," he says. "Many of the kids were my age and had lost their parents to violence and terrorist attacks. We were not fundamentally different, yet they lived in such radically different circumstances from mine. They walked miles to school. They lacked textbooks or modern technology. They lived in rooms with 20 to 30 people. Their opportunities were extremely limited. I felt a moral responsibility to do the most I could with the opportunities I had been given. That has been the prime motivation for my research."

In school he discovered a passion for science, encouraged by his chemistry teacher and two university-based summer schools.

When he was 17, he started as an undergraduate student at MIT, double majoring in biological engineering and in electrical engineering & computer science.

During his first year he worked part time at a biotech company, the DNA Medicine Institute. The company's mission is focused around personalised healthcare and he worked on the rHEALTH sensor – a handheld, reusable medical device that measures



blood cell and protein levels, allowing for critical diagnostic tests from one blood drop. He was part of a small team working on the second and third prototypes of the device on issues such as optics and data processing. The device has gone on to win numerous awards, including the \$500K Nokia Sensing XChallenge competition and is a finalist for the \$10M XPrize.

He was keen to get experience of a variety of different settings so in his second year he moved to the renowned engineer Professor Robert Langer's laboratory at MIT where he worked on CellsQZ, a microfluidic device which delivers macromolecules to many cell types. In 2014, the device was named a "Top 10 World Changing Idea" by Scientific American. It is currently being commercialised through a start-up, SQZ Biotech, which has recently announced a \$500m collaboration with pharmaceutical company Roche.

During his time at MIT, Camilo has also worked with the synthetic biologist Professor Jim Collins and did research on nanobiotechnology as well as getting business experience of commercialising medical technology at McKinsey & Company.

For his research at Cambridge he hopes to keep learning and expanding his range of knowledge through merging biological engineering with computer science. "I will apply machine learning to datasets in medicine and biology with the aim of using these for therapeutic insights," he says, adding that he hopes to go on to do a PhD in Bioengineering. "By learning fundamental techniques and modes of thinking from a range of disciplines," he says. "I will have a unique and rich perspective for my research."

Safwan Aziz Khan

Pakistan

MPhil Public Policy
Christ's College



I come from Karachi, a city that symbolises the best and worst of Pakistan. As the “City of Lights” and Pakistan’s largest metropolis, Karachi is seemingly endless, not only in its geography but also the opportunities it promises for people. Karachi has changed many lives but not without an incalculable human, social, and environmental cost. Its tales are both endearing and horrific, a bitter-sweet symphony that many find difficult to detach themselves from. But Karachi is home – irreplaceable, welcoming, and warm (quite literally). Life here has never been easy, but it has inspired me to pursue a career in public service and undo the many damages that reflect bigger policy failures of Pakistan, from cosmetic development undertaken during extended (and unwanted) dictatorial regimes to crass capitalism under socialist and religious banners. I join Cambridge to undertake academic training in the finer crafts of policy making and practice. I am honoured to represent some of the finest institutions in Pakistan, including the Quaid-i-Azam University (QAU), the Sustainable Development Policy Institute, and the Jinnah Institute. Given my training on a heavy fodder of Keynesian thought at the QAU, I am excited about joining an institution where JM Keynes revolutionised modern economic thought, underlining why policy action was necessary to address economic problems.

Kristina Klein

Germany

PhD Zoology
Trinity College



From a young age, I have always been fascinated by the natural sciences. As an undergraduate in Molecular Biomedicine at the University of Bonn, I developed a strong interest in neuroscience. I have worked on several research projects using the fruit fly *Drosophila*; studying larval feeding behaviour, accumulation of evidence prior to decision-making in larvae, and attention in adult flies. My PhD will investigate the neural basis of operant learning in *Drosophila* larvae. This is the process in which an animal learns about the consequences of its own behaviour, leading to reinforcement or suppression of certain actions. I anticipate that these studies will reveal many of the general principles underlying operant learning. This will hopefully lead to a better understanding of operant learning in vertebrate model systems, facilitating the investigation of related diseases, such as learning disorders, neurodegenerative diseases or obsessive-compulsive disorders, and the development of better cures. I plan to pursue a career in scientific research, investigating the fundamental questions in neuroscience to help us better understand how the brain works. In my spare time, I volunteer as a mentor for high school students with exceptional mathematical talent.

Alex Kong

USA

MPhil Biological Science (Pharmacology)
Churchill College



When I was six, I announced to my parents that I would one day be a scientist, unaware of what a scientist actually did. Growing up in Lawrence, Kansas, a short drive from my future university, I was able to learn just that. My love for the sciences deepened at university, as did my passions for creative writing, performing a cappella music, and pipetting my way to carpal tunnel syndrome. As an undergraduate, I was fascinated by bacteria and viruses: intricate biological machines with carefully packaged machinery elegantly built to optimise destruction. This fascination was fuelled by research experiences in the pharmaceutical sciences at the University of Kansas as well as Washington University in St. Louis. At Cambridge, I will unite my passions for the pharmaceutical sciences and infectious diseases, focussing on various types of multi-drug transporter proteins responsible for many forms of antibiotic resistance in bacteria today. As antibiotic usage increases in clinical and agrarian settings, society faces a critical tipping point that could lead to generations of antibiotics being rendered ineffective. I am delighted to have the opportunity to advance our understanding of novel methods to overcome antibiotic resistance as a Gates Scholar.

Dima Krayem

Lebanon

PhD Development Studies
King's College



I have developed a profound interest in Lebanon’s socio-economic development through my Economics studies at UCSC and Yale University. In 2013, I returned to Lebanon as a Research Analyst for the World Bank. These were turbulent times in the Levant with the onset of the Syrian crisis wreaking havoc in Syria and neighbouring countries. In my three years at the World Bank, I worked on both operational and analytical projects, including projects in the fields of social protection and education aimed at mitigating the impact of the Syrian conflict on Lebanon and a multi-agency study of the “Economic and Social Impact Assessment of the Syrian Conflict on Lebanon”. With no imminent end to the war, the refugee crisis is resulting in a nexus between humanitarian and development spheres with long-term effects on refugee and vulnerable Lebanese communities. With my PhD, I plan to enrich the existing literature on the impact of refugee crises on host communities. I will attempt to capture the heterogeneous impact of the crisis on disaggregated host communities, while highlighting the benefits of hosting refugees on particular communities in an attempt to ease social tensions between refugee and host communities and improve current policy.

Joanna Lawrence

USA / UK

PhD Archaeology
Trinity Hall

I developed an interest in archaeology as an undergraduate student at the University of Wisconsin. After I withdrew from my former career as a ballet dancer, my passion to create physical expressions of myself found satisfaction in uncovering the memories of selves expressed in the physical objects they

left behind. As an archaeologist, I am interested in the everyday experiences of Bronze Age people in northern Europe. In my career, I plan to explore their personal and community identities, settlements and households, social organisations, engagements with material culture, and ideologies of gender and sexuality. My PhD research examines the objects related to metalsmithing, weaving, flint knapping, and other craft technologies from three Late Bronze Age sites in southern England. I seek to understand how these sites' unusual volume of craft production and unprecedented fortifications relate to social change preceding the Iron Age. I am thrilled for the opportunity to share my passion for archaeology with academic and public audiences as a Gates Cambridge Scholar, and to continue my graduate education at the University of Cambridge. I hope to inspire in others an appreciation for the beautiful diversity of humanity throughout the millennia. I am honoured to also be a 2013 Beinecke Scholar.

Matthew Leming

USA

PhD Psychiatry
Churchill College

I grew up in a Navy family, moving around five different states before attending high school. As a student in the 5-year Computer Science BS/MS program at the University of North Carolina at Chapel Hill (with a minor in Russian language!), I became interested in computational analysis of diffusion MRIs

of the brain as a means of detecting neurological disorders. This research took me to laboratories in St. Petersburg and London, as well as many hours on Linux machines at the UNC medical school. At Cambridge, I will pursue a PhD in Psychiatry, modelling structural and functional MRI data in infants using a neural connectome. I hope to establish a practical and theoretical basis for a new approach to neural connectomes that focuses on analysing circuitous connections in the brain, as a way to predict mental illness and neurological disorders in children. In the future, I would like to found a research-based company that develops diagnostic image analysis techniques, focusing on both developing this technology and delivering it to the hands of medical doctors that can use it to directly impact the lives of others.

Shu Ching Minerva Lim

Singapore

MPhil World History
Wolfson College

Having studied History as an undergraduate at the University of Oxford, I strongly believe that knowledge of the past is key to building a better tomorrow. History bridges the gaps of time, space and culture to expose the complexities and contradictions of human nature, teaching us valuable and relevant

lessons about ourselves and our world. It is my belief that an MPhil in World History at Cambridge will not only deepen my exposure to global historical diversity, but will also allow me to become an agent in championing and spreading such diversity. A Singaporean by birth, I hope in my postgraduate dissertation to explore the myriad social, political and cultural representations of Peranakan women, a unique ethnic group at the crossroads of Chinese and Malay cultures that has often been ignored and downplayed in the existing historiography. It is my hope that my research will not only empower women as social and historical agents, but also preserve and shed new light on modern Singapore's rapidly vanishing heritage. Indeed it is because of my desire to make a difference that I am honoured to be joining the Gates Cambridge family, an international community that constantly strives to better the world we live in.

Christine Mbai

Kenya

MPhil Architecture and Urban Studies
Wolfson College

I am honoured to join the Gates Cambridge community as an aspiring Kenyan graduate architect. At Cambridge, my thematic research areas will be environmental planning, building performance, simulation and prediction of comfort levels in buildings. My research foci build upon

my undergraduate thesis work at the University of Nairobi, in which I explored different approaches that may be used to achieve user comfort in buildings in warm humid climates. These climatic zones are difficult to design for, due to high humidity and elevated ambient temperature. I intend to implement my research findings in the environmental planning and design within Kenya's newly devolved system of administration (incorporating county governments) through both the formulation of policy and actual building design, that I may contribute to the sustainable development of Kenya's envisioned cities and towns. I am passionate about actively mitigating the effects of climate change, especially because building and construction activities contribute to over 40% of global carbon emissions. As such, my primary academic goal at Cambridge will be to explore, learn and share with others avenues to deploy 'Architecture for the Climate of Tomorrow.'

MANCHURIA AND THE STORY OF MODERN CHINA

YEVGEN SAUTIN

Manchuria was a focus for Chinese, Russian and Japanese imperial rivalries for decades leading up to the Second World War, but the post-war period and its reintegration into China has been the subject of comparatively little research.



For that reason Yevgen Sautin will be focusing his PhD in History on the region and specifically on the period following the Second World War. “Manchuria represents the intersection between very different worlds both geopolitically and in terms of its identity,” says Yevgen. He believes his focus on how the region transformed following the war will allow him to wrestle with bigger questions about the balance of power in East Asia, the determination of borders and the impact of the early Cold War period on modern China.

“Manchuria is a complicated story of great powers,” he says. “My PhD will study how, in such a short period of time, the region went from being hotly contested to becoming fully integrated into the new Chinese state. It’s an important story about modern China.”

CHILDHOOD

Yevgen, who starts his PhD in the autumn under the supervision of Professor Hans van de Ven, has always had a strong interest in history and its impact on the present. Having been born in Ukraine at the time of the collapse of the USSR, he says, “history was always around me”. His grandfather would tell him stories about World War Two and, although his family moved away from Ukraine they would visit in the summer and saw the gradual transformation of the country over the years. Yevgen also developed an early interest in the Far East. His family moved to Nagasaki in Japan when he was seven. Although he was homeschooled, he had Japanese friends and had the chance to absorb East Asian culture. “Nagasaki has

had a formative influence on what I studied and on my later work. I have always been looking to see how I can make Asia something that is part of my professional career,” he says.

UNIVERSITY LIFE

After Nagasaki, his family moved to Florida where his parents both work at the University of Florida. His interest in Asia remained with him, though, and led to him studying Chinese at the University of Florida after choosing to major in history and economics and finding himself drawn to East Asian history. As part of his course he was able to travel abroad – to Taiwan, Beijing, Russia, and South Korea.

His undergraduate dissertation was on late 19th century Russian intellectual history and he was fascinated by the way it differed greatly from that of Western Europe at the time because of the huge gap in Russia between the radical left and the reactionary right.

He graduated in 2012 and then did a study abroad programme in Nizhniy Novgorod in Russia over the summer funded by the US Department of Education.

That was followed by a one-year fellowship at the Carnegie Endowment for International Peace, working on the Russia and Eurasia and Energy and Climate Change programmes, where he focused on issues ranging from US-Russia relations to Canadian tar sands. During that time he was part of a UN/EU conflict resolution effort on the Trans Dniester region which brought stakeholders in the conflict together.

Yevgen then returned to his studies and did a master’s in international relations at the University of Chicago, taking a range of classes, with a focus on Northeast Asian contemporary history. During his course he won a critical languages scholarship from the State Department to study in China and spent a year in Taiwan on a scholarship, studying Chinese language, literature and history. This helped to solidify his desire to pursue a doctorate in history.

Since then he has been working as a risk analyst at US Bancorp in Washington DC, focusing on issues such as cyber security and technology policy.

Ryan McDonnell

USA

MPhil Nuclear Energy
St John's College



During my Systems Engineering undergraduate studies at the United States Naval Academy, I had the opportunity to take a course in Nuclear Engineering. This course not only sparked my interest, but illuminated my undiscovered passion and fascination with nuclear energy. In pursuing

an MPhil in Nuclear Energy at Cambridge, I hope to acquire the technical expertise, policy skills, and economic knowledge necessary to lead the advancement of nuclear energy as a principal source for the energy needs of the future. The world needs abundant, clean, cheap, and safe energy, for it has implications for the preservation of our planet and also for the improvement of millions of lives. While nuclear energy is not the sole answer, it will play an integral role in meeting this global energy need. I am interested in helping to solve the social and economic obstacles associated with nuclear energy as well as overcoming the technical challenges in making safer and more efficient reactors. Following my studies at Cambridge, I will be serving in the U.S. Navy's Submarine force and hope to use the knowledge and experience gained through post-graduate education to facilitate my development as an officer and as an agent for change around the world.

Paul Meosky

USA

MPhil English Studies: 18th Century and Romantic Studies
Homerton College



As the oldest son of seven children, I learned to read and immediately started reading to others. I have always loved sharing stories with my friends and family, and I want to spend my life bringing people together through literature. I have been blessed to spend four years at Harvard as an English

major, studying communities united by storytelling, particularly in Wales and Ireland. At Cambridge, I will pursue a MPhil in 18th Century and Romantic Studies with a focus on children's literature and education. Specifically, I will investigate the curious case of Mother Goose, whose imaginary voice illustrates modern concepts of authorship, fiction, and identity at the axis of national and childhood communities. I plan to take my Cambridge experience into the classroom as a middle school English teacher. Ultimately, I hope to become an education policymaker and build learning communities wherever I go. I am so grateful to receive the Gates Cambridge Scholarship, and I am excited to join this organisation! My interests include; romantic poetry, baking, gardening, musicals, running, saxophone, Celtic folklore, classic films, all novels (especially by Charles Dickens or Terry Pratchett), and murder mysteries!

Michael Meaney

USA

PhD Education
Churchill College



During my childhood, I learned the value of education and its power to transform. I spoke with a pronounced stutter and was fearful of speaking in front of others. I was fortunate that my parents and teachers helped me overcome my speech impediment by giving me the ideas, knowledge, and

creative sensibility that helped me forge a stable voice. I found that voice at Georgetown University, where I researched the implications of economic development on marginalised communities, developed an alternative spring break program focused on immigration and human rights, worked for Congresswoman Gabrielle Giffords, and served as student body president. After graduation I joined Teach for America in my home state of Arizona, during which time I completed a Masters degree in curriculum and instruction. As a teacher, I witnessed the powerful impact that educational technology can have on student achievement and educational equity for students from lower socioeconomic backgrounds, something that came into even sharper relief for me when I served as an Innovation Fellow at Arizona State University. I am now dedicated to examining whether Massive Open Online Courses (MOOCs) and other models of online learning can expand educational equity in post-secondary education.

Sara Morrisset

USA

PhD Archaeology
St John's College



I am an archaeologist interested in the arts and architecture of the cultures of Peru. It is through my personal experience as a classically trained artist that I became fascinated at how artifacts can express individual and cultural identity. The study of art and architecture of the past allows

us the privilege to uncover information about forgotten peoples and cultures. This interest led me to pursue Bachelors degrees in both Art History and Anthropology at the University of California Los Angeles. I believe the complex nature of human society requires examination from the perspective of multiple disciplines and my current MPhil research at Cambridge University reflects my passion for inter-disciplinary work. My past research has pertained to the topics of agency, heritage, phenomenology, iconoclasm, ontology, gender, and materialisation of ideology. My PhD research will serve to fill a lacuna in the knowledge of the Late Intermediate Period on the south coast of Peru and will shed light upon the shrouded origins of the Ica-Chincha culture that lived in the region. This project will help to understand this understudied area of Peru and will ultimately serve as a collaborative project with the local population to preserve and display the artifacts in a local heritage museum.

Harum Mukhayer

Sudan

PhD Law
Pembroke College

I am an international civil servant, a global nomad and a *policy* activist. I come from Sudan, I was born in the UAE, and grew up in Scotland. I have an LLM in Natural Resources Law and Policy and for the past 8 years have been working with the UN in Sudan, South Sudan and Somalia, and volunteering with the Darfur Development and Reconstruction Agency (DDRA). My career focus is on advising governments on the design and implementation of natural resources laws and policies that better serve the poor. Has my mission been successful? In part, yes, but I admit it is still a work in progress. I am grateful to the Gates Cambridge for recognising the importance of my pledge and commitment to action. My PhD will research the role of international law in helping communities, in border dispute areas, access and use natural resources and exercise their *transboundary* right to food, subsistence and property. I reject the notion that holds political instability or state fragility as an excuse not to secure human rights for those living at the margins. Thanks to the Gates Cambridge, I have an opportunity to pursue my commitment further through my PhD. It is an absolute honour to be joining the Cambridge community as a Gates Scholar. I look forward to reporting on the success of my mission over the next 3 years!

Alice Musabende

Rwanda / Canada

PhD Politics and International Studies
Murray Edwards College (New Hall)

I was born and raised in Rwanda, and when I was 14 years old my family was killed during the Rwandan genocide against the Tutsis of 1994. Although I was too young to understand its roots, this tragedy would forever shatter my life and shape the person I would become. I graduated from Rwanda's

first School of Journalism and I hold a Master's in Journalism from Carleton University. I have worked as a journalist in Canada's major news organizations. I am currently completing a Master's in International Development Studies from Dalhousie University and have previously worked as an international development worker in Rwanda. At Cambridge, I will be researching further the dynamics of peacebuilding in the context of post-conflict countries in the Great Lakes of Africa, by investigating ways through which international organisations navigate the normative crosscurrents that come with peacebuilding. Centred around the issues of democratisation and democratic recognition, this research seeks to explore how international actors respond to post-conflict countries when they express a strong wish to articulate the agenda, the levers they have as well as ways in which they use them. Ultimately, I seek to contribute my perspectives as an African scholar to a better understanding of peacebuilding on the continent and in the world.

Malavika Nair

India

PhD Materials Science
Churchill College

Leaving Singapore, the tiny dot I call home, I joined Cambridge to pursue my Bachelor's and Master's degrees in Materials Science and Metallurgy. Here I was enamoured by both the beauty and simplicity of Materials Science: Its focus on structure across various spatial

and temporal scales can be used effectively to approach everyday items like polyethylene bags to more esoteric concepts like the crystallography of uranium. This underpinning principle of uncovering the structure-property-characterisation relationship is what drove me to understand biomedical materials through the lens of Materials Science. By combining experimental and computational techniques, my research aims to probe the architectural cues that will enable us to successfully obtain cellular selectivity in three dimensional environments for tissue regeneration. Collagen scaffolds are particularly exciting in this regard – not only do they bridge the gaps formed by diseased tissue to provide mechanical support as well as the potential for cell colonisation, they are also bioresorbable, leaving little to no trace of the scaffold after the desired tissue has regenerated. Outside of developing a vested interest in ice-templated scaffolds, I enjoy exploring linguistic etymology, hiking and having a good chat.

Catherine Newman

USA

MPhil Biological Science (Biochemistry)
Churchill College

As an undergraduate at Duke University majoring in chemistry with a concentration in biochemistry, I was drawn to studying structural biology and biochemistry as a means of visualising protein structures to better understand how they worked. I am also passionate about global

health and want to find treatments for infectious diseases, especially those impacting the developing world. Given these interests, my undergraduate research focused on multidrug resistance, using x-ray crystallography and biochemical assays to understand how transcriptional regulators control transcription of key proteins that create resistance. I'm now excited to pursue an MPhil in Biochemistry at Cambridge to further my research on multidrug resistance by examining the structures of type 1 secretion systems using cryo-electron microscopy. In the future, I hope to use structural biology and biochemistry to promote rational drug design and develop treatments that can benefit the global community. I'm honoured to join the Gates Cambridge community.

BUILDING BRIDGES TO RELIGIOUS UNDERSTANDING

MOHAMMAD SHOMALI

When he was a child, Mohammad Shomali met several religious leaders, including the Pope. The meetings came about because his parents ran interfaith dialogues between Muslims and Christians. "From a very young age I have had a passion for bringing people together from different faith groups," he says.



That passion has driven his studies: his MPhil in Middle Eastern Studies at the University of Cambridge where he has focused on Jewish Muslim relations and his PhD, which he begins in the autumn, which will look at Islamic law and minority human rights.

Mohammad, an imam who has led workshops in Africa which give young people the skills they need to confront extremism, has also used stand-up comedy to counter stereotypes in the UK and bring people from different communities closer together.

Born in Isfahan, Iran, he went to secondary school in the UK and was all set to do A Levels. After much soul searching, though, he decided that he wanted to study to be an Islamic cleric at the Islamic Seminary in Qom. It wasn't that he was a particularly religious child. "Many people were surprised at the direction I took, including my parents," he says. "But I was always asking why as a child. I wanted an explanation for everything. It's just that the questions got bigger after my GCSEs and I started to question the point of life and my role in it."

The culture at the seminary was very different to what he had been used to. He says: "It was very much ethically based. Students had a passion to become better people. It was inspiring."

After three or four years he started teaching and from 2009 he began travelling to East Africa for a few months at a time to teach with the International Institute for Islamic Studies.

Mohammad realised that students in one of his classes were being targeted by the Islamic extremist group Boko Haram. He says extremist groups were going from village to village recruiting young children so he decided to work with colleagues to give workshops to teach them the communications skills

they needed to be able to resist extremism: the ability to think rationally and critically. The workshops were given in Tanzania, Kenya, Rwanda and Uganda. Mohammad says a few of the students said they had left Boko Haram because of his work.

"I want to show that Muslims can be funny and use comedy to communicate with people about this difficult period we are living through."

Mohammad's studies lasted eight and a half years. He then applied to do a master's in Middle Eastern Studies at the University of Cambridge focusing on Muslim Jewish relations and in particular on the Israeli Palestinian conflict from the point of view of Jewish scholars. At Cambridge, he has had access to original documents from the Fatimid empire which tell the story of Jewish daily life in a Muslim state and which he says have changed the way scholars think of the era.

During his MPhil he became very passionate about the human rights of non-Muslims in Islamic law and teaching, an issue he says is very relevant at the current time and which he wants to form the basis for his PhD. He believes it is critical to be able to confront ideologies such as that of IS and to show that they have no rational or religious basis. That requires a rigorous attempt to understand the core of the problem. "Without that understanding there can be no proper solution," he says.

While he has been at Cambridge, Mohammad has given talks to Muslim communities in Cambridge and London in his role as an imam. He has also been involved in confronting stereotypes in a very direct way through performing stand-up comedy around the university.

"It's another way of bringing people closer together," he says. "I want to show that Muslims can be funny and use comedy to communicate with people about this difficult period we are living through."

Kamal Obbad*

USA / Canada

MPhil Advanced Computer Science
Pembroke College



As an undergraduate at Harvard, I have been fascinated by the intersection of biology and computer science. I am particularly interested in how we can leverage computational techniques to improve patient outcomes. In the future, I hope to help develop novel ways to use personalised genomics and gene expression profiling to build effective treatments for a myriad of diseases.

*Deferring to 2017

Sharmila Parmanand

Philippines

PhD Multi-disciplinary Gender Studies
Homerton College



Having lived in the Philippines, I am interested in how state policies and other interventions targeted at poor women interact with their lived realities. For my master's thesis at the University of Melbourne, I conducted interviews with female microcredit borrowers to examine the traditional assumption that access to credit empowers women, especially mothers. After working in the anti-human trafficking sector for over two years, I would like to critically assess anti-trafficking discourses and policies in the Philippines. For my PhD, I will examine the anti-trafficking ecosystem, and in particular, the policy-making process, the knowledge claims made about victims and women in vulnerable employment situations and how these claims are negotiated and produced, the relationships among international funders, the state, and civil society actors, and the effects on women of measures such as rescue operations and rehabilitation. With my work, I hope to give primacy to the experiences of individuals directly affected by these interventions, explore any possible unintended consequences, and contribute to the ongoing conversation about how best to uphold their agency and human rights.

Edyth Parker

South Africa

PhD Veterinary Medicine
Clare College



I have always been fascinated by the dynamics of infectious diseases, particularly the epidemiology of emerging viruses, and I have pursued this interest both in my undergraduate work in the Republic of South Africa, as well as at Cambridge during my masters. Concurrently, I am passionate about

the role of the public health sector in maintaining a just and equal society, and hope that my work will translate into more effective policy making in addressing the burden of infectious disease in sub-Saharan Africa. For my PhD in the Department of Veterinary Medicine, I will seek to identify and quantify the ecological factors that shape the risk of influenza virus emergence, from cross-species transmission of animal influenza viruses to immune-naive human populations. My project will aim to identify the factors that translate the human-animal interface, particularly agricultural animal populations, into emergence risk, identifying spatiotemporal trends to inform the distribution of surveillance and medical intervention for pandemic preparedness. I'm elated at the prospect of engaging in some robust cross-disciplinary discussion with my fellows, especially around global health, formal and informal politics and whether Han shot first. My interests include; science (all of it), politics, speculative fiction, running, hiking, good coffee, bad movies.

Anna Plumridge

New Zealand

PhD English
St John's College



I was born in Christchurch, New Zealand. As an only child, reading was a crucial source of entertainment, and a uniquely important channel to other cultures and ideas. It was therefore natural for me to study English at Victoria University of Wellington. For my Master's thesis I produced a scholarly edition of 'The Urewera Notebook', a diary kept by the writer Katherine Mansfield in 1907, while she was camping in remote parts of New Zealand. For this project I carried out extensive research amongst local Maori communities and my thesis was published by Edinburgh University Press in 2015. For the first time my academic writing reached a broad, international readership. This experience confirmed my desire to produce critical editions and literary criticism relevant to the popular as well as to the academic reader. The name Samuel Butler hovered at the edges of my consciousness as a child; he was a writer who farmed inland from Christchurch from 1859–1864. I became more interested in Butler while studying Mansfield; it struck me that the works of both writers offered perspectives on the cultural "pull" of Empire, albeit through different eras and patterns of emigration and relocation. At Cambridge I aim to study Butler's satirical novel 'Erewhon', in order to consider its indebtedness to Butler's colonial experience, and to shed light on this period of New Zealand literary history.

Dena Qaddumi

USA

PhD Architecture
Darwin College



My concern with the intersection between the built environment and politics has resulted in an education and professional background spanning the fields of architecture, planning, research and higher education in a diverse range of cities: Austin, New York, London, Bethlehem and Doha.

These experiences have converged towards developing my interest in examining the role, responsibility and capacity of architects and planners to confront conflict in Arab cities. Five years on from the start of the Arab Spring, and the Arab world finds itself lost in 'transition'. Arab cities have become sites of political, social and full-blown violent conflict and this seems to be the trajectory for the foreseeable future. The sudden, overwhelming expressions for freedom and dignity have largely been unsatisfied, with those already vulnerable in increasingly desperate conditions. My PhD research seeks to understand the emerging demands on architects and planners – as practitioners embedded in the production of the built environment – during this distinct time. I aim to contribute to knowledge that would be explicitly beneficial to multiple stakeholders – educators, practitioners and policy-makers alike.

Ayesha Riaz

Pakistan

PhD Genetics
Churchill College



I grew up and live in Karachi and received my undergraduate degree in Biology from the University of Karachi. I also did my MSc. from the same university and later on became associated with it as a faculty member in the Department of Genetics.

I completed my MS. in Genetics from the Iowa State University on a Fulbright scholarship. For my thesis, I investigated the possible roles played by the RNase T2 enzymes and lysosomal membrane proteins in ribosomal RNA degradation in the lab of Dr. Gustavo MacIntosh. I collaborated with Dr. Linda Ambrosio on the project who introduced me to the wonderful world of fly genetics whereby I developed a keen interest in using the fruit fly, *Drosophila*, for modelling human neurodegenerative diseases. Hereditary spastic paraplegia constitute a heterogeneous group of hereditary disorders characterized by progressive lower limb weakness due to damaged or dysfunctional nerves and form the second most important group of motor neuron diseases. My doctoral research will be undertaken under the supervision of Dr. Cahir O'Kane and will focus on understanding the roles of hereditary spastic paraplegia genes involved in organisation of axonal endoplasmic reticulum. Upon completion of my PhD, I intend to return to my university to continue teaching and doing research in my field of study. I am excited and honoured to begin my doctoral studies at Cambridge as part of the Gates community.

Connor Richards

USA

MASt Applied Mathematics
Churchill College



Studying physics at the University of California, Riverside, I worked alongside faculty searching for evidence of new physics at CERN's Large Hadron Collider. During my time at UC Riverside, I became very active in science outreach and advocacy, including developing an outreach program targeted at

local high school students and I hope to continue my outreach work with physicists from the Cavendish Laboratory during my MASt. My field is elementary particle physics, meaning that I am interested in what makes up the universe at the most fundamental level. Dark matter and other questions about the universe have long fascinated me, and I hope to help answer these during my career. Moreover, I hope to help explain their significance to the general public, because I believe that better access to cutting-edge science is needed in primary and secondary schools. A lack of exposure to science during my childhood almost stifled my career before it began so it is my goal to help make science more accessible to all. I am ecstatic to study at Cambridge alongside some of the world's foremost physicists and after my PhD I hope to secure a faculty position in physics.

Cerianne Robertson

UK

MPhil Sociology
St Edmund's College



I am thrilled to have the opportunity to join the Gates Cambridge community as an MPhil student in Sociology. Currently, my work for the Rio de Janeiro-based news platform RioOnWatch.org involves coordinating research on the opportunities for media to challenge dominant narratives

about Rio's historically stigmatised favela communities. This is a particularly important moment for activists in Rio due to the immense media spotlight brought by the Rio 2016 Olympic Games. Intensified global media scrutiny offers unique leverage for marginalised voices to amplify their struggles for change, at the same time as forced removals and Games-focused public spending serve to marginalise some populations further. At Cambridge, I'll be expanding my current work by exploring the narratives and forms of media produced by activists across a number of sports mega-events. I'm British by nationality but have lived largely in the United States since age seven, completing my undergraduate degree at Harvard University. I'm looking forward to continuing my studies in the UK and having more regular access to authentic Cadbury's chocolate.

POETRY AT A TIME OF CONFLICT

IRYNA SHUVALOVA

What is the role of poetry in war? How can it help people to cope with violence, fear and loss? Award-winning Ukrainian poet Iryna Shuvalova will investigate these questions for her PhD in Slavonic Studies, starting this autumn.



Under the supervision of Ukrainian studies expert Dr Rory Finnin, she will focus on folk songs and the oral poetry tradition in Ukraine and its connections to contemporary written poetry, particularly with regard to the war in Eastern Ukraine, examining how poetry can contribute to cultural strategies for handling war-inflicted trauma.

She says: "If you look at the Ukrainian folk songs and poems from past centuries the shadow of conflict often permeates even the love songs and lullabies. Now we are living with war again and it is important to look at how poetry can help people to cope."

Iryna believes oral poetry is central to Ukraine's history. She says: "Because of my country's colonial past, the majority of Ukrainians, including my great-grandparents and their ancestors, depending on the political situation or historical era, were either prevented from acquiring literacy or discouraged from communicating in their own language. Sung poetry often remained their only available means of self-expression. In many ways, I owe the honour of having been selected as a Gates Cambridge scholar to these unsilenceable people of mine. Through my work I seek to rediscover their lost voices, and make them heard."

That mission is an intensely personal one for Iryna. Although both her parents went to university, her grandparents were never educated beyond primary school.

For Iryna, poetry is central to understanding human experience in all its diversity. For that reason, she became involved in a project to publish the first book of writing by LGBT writers in Ukraine. The project involved coordinating a team of more than 40 writers, translators and academics from 15 countries. Despite threats and physical attacks from ultra-right organisations, she says the book managed to provoke an important debate on LGBT writing in Ukraine. She has

also directed the literary section of the 'Woman3000' project, touring Ukraine in 2010 to give readings and provoke discussions about women's role in society.

Iryna has taken these experiences forward through a series of open lectures and workshops aimed at helping people to express themselves in writing.

Throughout her career she has combined her writing with academic research, teaching and a commitment to broadening her horizons.

She studied philosophy and has a master's in the philosophy of language from Taras Shevchenko National University of Kiev.

She also has a graduate qualification in translation studies and over the last few years she has translated a number of literary works from English to Ukrainian and vice versa. These include Yann Martel's 'Life of Pi' and Ted Hughes's selected poems. She is currently working on Virginia Woolf's 'To the Lighthouse'.

As Ukraine didn't have a master's course in Comparative Literature she applied for a Fulbright scholarship in 2013 to study at Dartmouth College in the US. She had lived in the US for a year as a high school student through the Future Leaders' Exchange Programme run by the US Department of State.

The Dartmouth College course whetted her appetite for continuing her academic research and for teaching – she worked as a professional writing tutor during her master's.

At the same time, she continued to write and perform. Her first book of poetry was published in 2011 and she has written three more collections. Her poetry has been translated into nine languages and she has won numerous awards, including first prize in the most prestigious national competition for young poets. She is a judge for national literary prizes and has been Head of International Development for the Ukrainian Literary Centre since January 2015.

She hopes to continue to combine her academic work and literature. "They allow me to bring together two things I find particularly enjoyable: working with people and working with words," she says.

Camilo Ruiz

USA / Colombia

MPhil Biological Science (Sanger)
King's College



I am a senior at the Massachusetts Institute of Technology majoring in Biological Engineering. I have conducted extensive research focusing on translational and high-impact work. Working as part of the team at the DNA Medicine Institute, I helped to develop a blood diagnostic device capable of shrinking a room's worth of hospital equipment into a patient's hand. The device won the \$500K Nokia Sensing XChallenge competition and is a finalist for the \$10M XPrize. At MIT's Langer Lab, I helped to develop the CellsQZ, a microfluidic device to deliver macromolecules to many cell types. In 2014, the device was named a "Top 10 World Changing Idea" by Scientific American. Overall, I have two main goals. First, I hope to develop cutting-edge tools that make bioengineering cheaper, faster, and more accessible. Second, I hope to invent biotechnologies that solve critical problems in health and energy. By developing a strong foundation in machine learning and other computational techniques, I hope to model, design, and construct biological systems more effectively.

Juan Schnettler Fernandez

Germany

PhD Biochemistry
Darwin College



Being of Venezuelan and German origin, I grew up in Germany and as an undergraduate student in Konstanz, learnt to appreciate the beauty of enzymatic reactions while struggling with the limited efficiency of conventional organic synthesis. Since, I am interested in how proteins evolve and how they can be evolved or designed for a specific function. My first experiences with microfluidics in Paris then awakened my interest in scaling down chemical reactions and biological assays into microdroplets. During my PhD in Cambridge, I will use microfluidics to screen the enormous catalytic reservoirs of microbial ecosystems for new biocatalysts that could for example power sustainable processes in industry or the degradation of pollutants in soils. Through my previous work in a health project in indigenous communities I am also committed to supporting rural development in the Peruvian Andes. I am honoured to join the Gates Cambridge Community and looking forward to meeting other scholars who seek to address global challenges with scientific passion.

Yevgen Sautin

USA

PhD History
Selwyn College



I was born in Kiev, Ukraine, lived in Japan as a kid, and grew up in Gainesville, Florida, where I went to school at the University of Florida. Since childhood I have been fascinated by history. As an undergraduate student, I began studying Chinese, which quickly became a lifelong pursuit. During my college years, I studied abroad in China, Russia, and Taiwan. After college, I worked at the Carnegie Endowment for International Peace as a Junior Fellow in the Russia-Eurasia and Energy and Climate Change Programs. I then went back to school to get an M.A. at the University of Chicago in International Relations. This past year I was in Taiwan again as a Boren Fellow studying Chinese and doing research. At Cambridge I will be pursuing a PhD in Modern Chinese History, researching Manchuria in the early post-war period. At the time Manchuria was a fiercely contested space both geopolitically and in terms of its identity. The topic has been understudied by historians and will allow me to wrestle with bigger questions about the balance of power in East Asia, the determination of borders, and the impact of the early Cold War period on modern China. When not working I love running, being a foodie, and globetrotting.

Morgan Seag

USA

PhD Polar Studies at Scott Polar Research Institute
Girton College



My research interests centre on science, gender, and politics in remote transnational spaces. In broad terms, I am interested in the "human" side of these common spaces: how are they used?, by whom?, to what end? More specifically, my PhD research at Cambridge's Scott Polar Research Institute examines institutions of Antarctic science, asking how they have evolved to become more gender inclusive over time. I became interested in the polar regions during the austral summers of 2011–12 and 2012–13, when I worked for the US Antarctic Program at McMurdo Station, Antarctica. My PhD research also builds upon undergraduate training in political science at the University of Pennsylvania, as well as early career experiences in cross-cultural communication and science education. My research is motivated by a belief that in order to create a better world, it is essential to understand how institutions can become more diverse and equitable; and I am driven to share my excitement about the possibilities opened up with a better understanding of our shared global spaces.

Noor Shahzad

Pakistan

MPhil Modern South Asian Studies
Christ's College



I am broadly interested in literary cultures, reading practices and the conditions in which texts are consumed and circulated. My undergraduate research at Lahore University of Management Sciences has focused on the affective space that Urdu women's digests provide to women. Through an

MPhil in Modern South Asian Studies I look forward to further investigating these digests. My research aims to examine the continuities and discontinuities in discourses on women's reform in Urdu literature. I am deeply honoured to be joining the Gates Cambridge community and look forward to learning from and contributing to such a diverse group of scholars.

Mohammad Javad Shomali

Iran

PhD Asian and Middle Eastern Studies
King's College



Recently my supervisor introduced me at a seminar as the "first Muslim cleric who has delivered a sermon in the mosque and performed a stand-up comedy in a theatre the same night". This quote perfectly reflects my passion in leading the Muslim community towards a rational understanding

of religion and away from extremism as well as addressing, through comedy, misconceptions about Muslims. It is this passion that has driven me to where I am now, having studied at the Islamic Seminaries of Iran for nine years and currently completing my MPhil at the University of Cambridge. During my time in the Seminaries, I studied and later taught theology, philosophy and Islamic jurisprudence and achieved ijtehad, the religious authority to issue fatwas. The best way to tackle the rising problem of extremisms is to provide an alternative interpretation through scholarly work, and disseminate this research in the Muslim community and beyond. My PhD research aims to explore ways in which the rights of the non-Muslims and in particular rights of the Jews are considered and recognised by Shia jurists. I aim to make a direct impact on policy by understanding the human rights that are inherent in Islam and connecting them to the present context. I am very honoured to be joining the Gates Cambridge community and I hope to contribute to the efforts made to eradicate extremism.

Iryna Shuvalova

Ukraine

PhD Slavonic Studies
St John's College



I am a descendant of Ukrainian peasants: people who attended at best some years of primary school, and often none whatsoever. Only a few of them could read and write. Considering this, I have been incredibly privileged to access great education, both in Ukraine, where I studied Philosophy

and Translation, and in the US, where I earned my MA in Comparative Literature from Dartmouth College on a Fulbright Scholarship. Throughout my whole life, as a poet, translator, editor and writing coach I have been fascinated with the transformative and expressive power of the word and its impact on people's lives. At Cambridge, I plan to research the oral poetry tradition in Ukraine and its connections to contemporary written poetry. Because of my country's colonial past, the majority of Ukrainians, including my great-grandparents and their ancestors, were discouraged from acquiring literacy, or even from communicating in their own language. Sung poetry often remained their only means of self-expression. In many ways, I owe the honour of having been selected as a Gates Cambridge scholar to these unsilenceable people. Through my work I seek to rediscover their lost voices, and make them heard.

Sofia Singler

USA / Finland

PhD Architecture
Pembroke College



Growing up in and around buildings designed by Alvar Aalto, Finland's most prominent modernist architect, instilled in me the conviction to devote my life to architectural design and scholarship. My PhD will examine how Aalto's ecclesiastical oeuvre can enrich our understanding of the

relationship between religion and modern architecture, and revise misleadingly uncomplicated assumptions concerning their mutual exclusivity. Modernism's veneration of reason is commonly accepted as evidence of a project of total secularisation; its self-proclaimed belief in the rational, precise and machine-produced has led to insufficient appreciation of its ability to endure doubt and uncertainty, key themes in 20th century theology. In addition to a deeply personal connection to Aalto's architecture, my hometown Jyväskylä provided me with the invaluable opportunity of attending architecture classes at a public art school from age ten onwards. An understanding of the built environment in its full cultural context is a civic responsibility and privilege that, at best, cultivates a critical approach to architecture in the next generation's thinkers – it is this gift that I aim to give back to others. I will dedicate myself both to Aalto scholarship and to children's architecture education and in so doing reinforce broader appreciation of the discipline's agency as a societal project.

HOW ARCHITECTURE FRAMES OUR LIVES

SOFIA SINGLER

Sofia Singler attended extracurricular architecture classes in Finland from the age of 10. The experience has shaped her career so far and this autumn she begins a PhD in Architecture, focusing on the work of Finland's foremost modernist architect Alvar Aalto. Now she wants to ensure other children can have the same start as she did.

For the past few years she has been running workshops in Finland and the US on architectural themes for children under the age of 12 to introduce them to architecture, primarily through play and curiosity-driven, hands on activities such as model building. She says: "We teach children the basics of literature, theatre and poetry, but we don't teach much about architecture. If architecture is taught at school it is mostly about its history. Architecture is becoming increasingly specialised and people are increasingly unaware of more complex architectural and urban issues such as planning, and more generally, of what makes good architecture. It has become a highly specialised, insular field only taught in universities. Yet it affects everyone's lives every single day."

She hopes to continue the workshops while she is at Cambridge and to use Cambridge as a "fertile laboratory" for her ideas and for her ultimate goal of setting up an architecture school of her own. She thinks Gates Cambridge will help to bring her ambitions to fruition. "The scholarship has fuelled my desire and plans with regard to children's architecture. It has given them more weight and inspired me further to give back," she says.

Sofia did all her secondary schooling in Finland, although she was born in the US and lived in four different countries before she was 10. At school she enrolled in extracurricular classes in architecture at a local art school. She did the International Baccalaureate and wrote her extended essay on the influence of architecture in Finnish literary modernism. She says Finland has a very strong design culture and that many designers approach the subject in a holistic way. "For me, architecture is the grand frame in which other design sits," says Sofia. "I am sure it is has influenced my perception of Finnish culture."

She started her undergraduate degree in architecture at the University of Cambridge in 2010 and during it she worked as her college Sidney Sussex's chapel warden. She was interested in ecclesiastical and funerary architecture and, since every college at Cambridge has a chapel, it was the ideal place to explore it.

Her dissertation was on the funerary architecture of Alvar Aalto. Sofia grew up in his home town of Jyväskylä which is also home to most of his buildings. "I have a very personal relationship with the buildings," she says. "I wanted to understand them from an analytical as well as an emotional perspective. Later, I became



particularly interested in cemeteries as public spaces and the relationship between funerary architecture and the theological and socio-cultural ideas of the time they were created." She was fascinated by the way Aalto's work was both rational and modern as well as being deeply humane and poetic.

During her degree she visited archives and museums in Finland to get inspiration and discovered that Aalto had done some beautiful sketches of projects that had never been completed, but which had not been mentioned in research studies before. It gave her a taste for doing original research.

After finishing her degree in 2013, she worked for a year at an architecture firm in the US. She worked on a series of projects, including a power plant project with a team of engineers. The experience inspired her to learn more about US architecture and she applied to Yale's school of architecture to do a master's degree. Yale placed an emphasis on exposing students to the different, sometimes clashing ideas of studio masters. One seminar class which had a big impact on her was on religion and modern architecture. It explored the relationship between architecture and theological developments in the 20th century.

Her PhD will expand her research on Aalto, broadening it to include all his ecclesiastical works, his churches and chapels as well as his crematoria, and she will study his work in relation to his contemporaries. She is also keen to explore the relationship between modern European architecture and 20th century theology.

Jacqueline Siu Canada / Hong Kong

PhD Surgery
Churchill College



I grew up in North Vancouver, Canada and completed a BSc in Honours Microbiology & Immunology at the University of British Columbia in Vancouver. Having worked in a variety of immunology-related fields throughout my undergraduate degree, my fascination of our immune system and the potential of immunotherapeutics grew thanks to the mentorship of my supervisors. I am interested in understanding the complex interactions between our immune system and foreign agents like donor organs in order to design therapies that utilise our incredible defence system. For my PhD in Surgery, I will be investigating how mixed chimerism, or the coexistence of donor and recipient blood cells, can induce transplant tolerance between the host and recipient. This ability to induce tolerance could counteract the risk of organ rejection while eliminating the need for lifelong immunosuppression drugs. I hope my research contributes to future improvements in bone-marrow and solid-organ transplantations, and I look forward to joining the Cambridge and Gates community.

Gabriela Sklencarova Slovakia

MPhil Advanced Computer Science
Churchill College



My time at the University of Cambridge began with the Computer Science Tripos. Although I have been programming since I was eleven, and studied Computer Science as a part of the International Baccalaureate Diploma Programme, it was the excellent course at Cambridge that revealed to me just how much the different areas of my subject affect other branches of knowledge and also everyday life. I believe it is important to spread basic computing knowledge, and I participated in several outreach projects before and during my undergraduate course, including leading a Code Club at a primary school in Cambridge. I completed several industrial internships, where I saw the details and challenges of building large concurrent and distributed systems, and my research interests lie in studying parallelism in software and hardware. I intend to spend my year studying for the MPhil in Advanced Computer Science learning more about concurrent systems and exploring programming language support for parallel computing.

Abdul Hai Sofizada* Afghanistan

MPhil Public Policy
Selwyn College



I grew up in Kabul, Afghanistan and spent about 9 years living in Pakistan as a refugee like millions of displaced Afghans. Since returning to Afghanistan in early 2002, I have actively taken part in the post-war recovery and reconstruction process. In 2004, I completed my MA in Post-war Recovery Studies at the University of York, UK. The programme provided me with the insight and analytical depth into post-war recovery and reconstruction and how to apply the newly-acquired skills in my country context. Over the last 15 years, my professional experience has evolved from engagement in immediate post-war recovery to public policy making in the development sector, working with the United Nations, the government and currently the World Bank. Afghanistan continues to face fragility and conflict, which demand qualified human capacity. My professional life since 2006 has concentrated on the development and improvement of the education system in the country. Education forms the backbone of growth and prosperity. At Cambridge, I will study the MPhil in Public Policy, an interdisciplinary course that nurtures future policy and decision makers. I am truly honoured to be awarded a Gates scholarship and to become a member of the community.

*Deferred from previous year

Maximilian Stammnitz Germany

PhD Veterinary Medicine
Pembroke College



After completing high school in Heidelberg, Germany, I spent a year within an eco-social community in the Atlantic Rainforest of Simões Filho, Brazil. My aim, ever since then, has been to apply modern biological research methods to questions of sustainable life and species conservation. Since mid-2015, as a Computational Biology MPhil and PhD candidate in the Transmissible Cancer Group of Dr. Elizabeth Murchison at the University of Cambridge, I have been working on genome analyses of Tasmanian devils, the largest carnivorous marsupials on the planet. The species is currently at risk of extinction, due to emergences of contagious facial tumour diseases (DFTD). We intend to gain insights into the evolution and molecular landscapes of these cancers by using next-generation sequencing, and our strong hope is to thereby contribute to saving wild Tasmanian devils in the long term.

Daniel Stevens

USA

PhD Theology and Religious Studies
King's College



A lifelong Los Angeles native, I am looking forward to the opportunity to study at an institution with so long a history of excellent scholarship. As an undergraduate at UCLA, I fell in love with the language, literature, and linguistics of Ancient Greek. The entire classical world fascinated me, and I enjoyed

exploring its mix of cultures and its wide range of both art and philosophical thought. Following undergraduate study, throughout three years of an M.Div. program at The Master's Seminary, I was able to dig deeply into the times and literature surrounding the New Testament. While there, I focused my studies on linguistic development between Attic and Koine Greek, early Jewish Christianity, and the interpretation of both New Testament and Patristic texts. Building upon this work, in my PhD, I will focus on how the concepts of covenant and promise were used in an early Jewish Christian text to provide a group identity and hope for an audience that had previously faced hardship and displacement from their property and were expecting to soon face more of the same. I am exceedingly excited and grateful for the chance to be a part of the Gates community and the academic community at Cambridge. My interests include; craft coffee, reading, table top board games.

William Theiss

USA

MPhil Early Modern History
Clare College



I come from the suburbs of Chicago and attended Yale University for a BA in Comparative Literature. There I studied ancient and modern languages - especially Latin, Ancient Greek, and Biblical Hebrew, and wrote my thesis on humanists and humanism in early modern

Europe. I got hooked inescapably on pedagogy when, last summer, I taught a Latin class to students in Brooklyn, New York. With Cambridge's MPhil in Early Modern History I will investigate the history of learning in early modern Germany; as an historian I intend to address the legacy of classical humanism and the dark arts of scholarship. I am honoured to be a member of the Gates community.

Parvathi Subbiah

USA / Venezuela

PhD Latin American Studies
Clare College



Although born and raised in Caracas, Venezuela, I am half-Indian, half Venezuelan, and a nationalised American. I began studying the piano and classical voice at a very young age, and by sixteen, I was singing opera professionally with Venezuela's leading orchestras - including the world renowned

Simon Bolivar Orchestra. I was scouted to pursue musical studies in the US at nineteen. Leaving the country was "a no-brainer," given Venezuela's dire political crisis, but it nonetheless felt like exile. I had a deep affinity to politics and after leaving I continued to write about Caracas: a dystopian character, full of natural beauty but ridden with crime and violence. I was fortunate to travel across continents with my singing, but my mother's pancreatic cancer forced me to re-evaluate my music career. My desire to understand the social crises afflicting Venezuela ultimately pulled me into academia. I began my MPhil in Cambridge in 2014 and looked at recurring deficiencies in Venezuelan Social Policy, sustained by the government's inability to diversify a rentier-based economy. My PhD will look at racism's role in Venezuela's entrenched inequalities and its effects on the political sphere. It will hopefully lead to the creation of a Venezuelan Institute for Research on Public Policy.

Joanne Usher

Australia

PhD Biological Science @ MRC LMB
Peterhouse



I grew up in Melbourne, Australia, and my undergraduate research focused on mitochondrial biology. While mitochondria are most well known as our cellular power houses, I have become increasingly fascinated by the wide variety of roles these organelles play within our cells. I

am currently working on mitophagy, which is the recycling of mitochondria, and in Cambridge I will work on ubiquitin, a highly abundant protein modifier. I am excited to examine the role of ubiquitin modifications in mitophagy, as this pathway has been heavily implicated in neurodegenerative diseases such as Parkinson's disease. Delineating the pathway is an important step towards targeting therapeutics to treat or prevent the disease. I look forward to joining the Gates community and meeting my fellow scholars this October.

Pedro Vallejo Ramirez Colombia

PhD Biotechnology
Robinson College



Born in Colombia but raised in Panama, I grew up playing with Lego. This passion for building translated into a love for science, which resulted in a Bachelor's in Optical Engineering at the University of Rochester. During my studies I explored the ray, wave, and quantum natures of light and I fell in love with its inherent duality. There's no absolute definition to light's character, it depends on the context in which it interacts with its surroundings. Science and technology inspire me, and management and entrepreneurship are my driving passions. I truly enjoy working with people, especially to push forward new technologies to improve our society's living standards. At Cambridge I will work with Professor Kaminski's group to pioneer new trade-offs between optical and digital complexity in super resolution microscopy to better understand chemical reactions in the human body at a nanometer scale. This could allow scientists to better understand protein aggregation in the brain for early diagnosis of neurodegenerative diseases such as Parkinson's and Alzheimer's. In the long term I want to become involved in international public policy on technological innovation and energy awareness; to bridge the gap between technical knowledge, management decisions, and policy making in the optics and photonics industry.

Aditi Vedi* Australia / India

PhD Medical Science @ CIMR
Trinity College



Children have an innate ability to bring joy to and captivate those around them with their vitality and innocence. My passion for paediatric health and welfare stems from their resilience and eternal optimism – improving the lives of children is my core belief and central motivation for paediatric oncology. I derive my childhood and education from Australia, cultural heritage from India and passion for children's healthcare and equity of access from both. I graduated with a Bachelor of Science, Medicine and Surgery from the University of New South Wales, and Masters in Medicine from the University of Sydney. Currently I am a clinical fellow with the Royal Marsden NHS Foundation Trust, developing new treatments for refractory cancers, having previously trained in paediatrics and haematology/oncology with Sydney Children's Hospital. My research in Cambridge will focus on childhood leukaemia, and explore the role quiescent cancer stem cells play in refractory and relapsed disease. My greater goal is to continue paediatric stem cell research in Australia as a clinician scientist.

*Deferred from previous year

Brandon Wesley USA

PhD Surgery
Sidney Sussex College



Growing up in New Jersey, my fascination with problem-solving and innovation inspired me to study chemical engineering at Villanova University. I graduated with awards for being at the top of my chemical engineering class as well as Villanova's College of Engineering. Engineering aims to elucidate vast systems by developing elegant solutions to scientific problems, and I have directed this ability toward my studies in biology and bioengineering. I became interested in regenerative medicine after being exposed to stem cell-based therapies at the McGowan Institute for Regenerative Medicine, and by working on my undergraduate thesis in gene therapy to analyse how different genetic elements affected the uptake and expression of a plasmid vector in cancer cells. Regenerative medicine has tremendous potential for personalised treatment of a vast array of diseases. For my PhD, I will explore stem cell therapies for degenerative diseases, with a focus on correcting and differentiating induced pluripotent stem cells into specialised tissues. I believe in providing modern medicine to people around the world and eliminating prevalent diseases. I attribute my focus and perseverance to my training in Tae Kwon Do, which I began at six years old. My martial arts mentors and family members have provided guidance at every step of my journey.

Joseph Wu USA

PhD History and Philosophy of Science
King's College



I grew up in southern California, and ventured over to Duke University for my undergraduate studies. Fascinated by the complexity of cells, I intended to study biology, and immediately joined a lab to research the genetic regulation of skin cancer. After chancing to take a philosophy seminar, I became increasingly interested in the conceptual foundations of science, in how the empirical questions for scientists often turned on theoretical concepts like causation, explanation, knowledge, and so forth. This led me to write a thesis examining cancer from a philosophical perspective. Upon graduating, I decided to pursue an MPhil in the Department of History and Philosophy of Science here at Cambridge, and I look forward to continuing my studies as a Gates Cambridge Scholar for my PhD. Apart from academics, I compete for the Cambridge University water polo team. I also enjoy snowboarding with my family, watching (but not playing) basketball, and music.

Eliska Zlamalova**Czech Republic**

MPhil Biological Science (Genetics)
Darwin College



Already as a school student in my hometown, Prague, I was fascinated by the ability of biological sciences to describe and even alter processes creating life itself. I volunteered as a horse riding therapist for disabled children and witnessed their families investing hopes into scientific discoveries that could treat

their children. This made me realise how powerful science is and motivated me to help others via scientific advancement. During my BSc at the University of Edinburgh I developed an interest in genetics and molecular biology. I was captivated by the speeding progress of this young field. I participated in diverse genetics research projects and spent two semesters at the University of Adelaide in Australia. These experiences enabled me to view the field from several perspectives and appreciate the wide applicability of molecular genetics with potential to impact agriculture, industry and medicine. My MPhil goal is to study axonal endoplasmic reticulum in *Drosophila* and the implications of its defects for the neurodegenerative disease, hereditary spastic paraplegia. Hence, this project allows me to use my skills in molecular genetics and pursue my long-term interest in neuroscience and human neuropathies. I aim to advance the understanding of spastic paraplegias which would enable their treatment in the future.

Leor Zmigrod**Netherlands / Poland**

PhD Psychology
Downing College



A critical question that permeates history and the media of today is how and why people become radicalised. Growing up in the USA, Europe, and the Middle East, I was intimately aware that radicalisation can emerge on all sides of conflict and so is not merely a product of a particular

ideology or demographic. By combining cognitive neuroscience and experimental psychology to study the psychological processes that underlie radicalisation to an ideology or group, my PhD will aim to address the gap in our understanding of the cognitive susceptibilities to internalising a doctrine and a willingness to harm and self-sacrifice for an ideological cause. Through this research, I hope to bring a fresh perspective to questions which have been traditionally only dealt with in the social and political sciences, and thereby to shape interventional and educational programs aimed at identifying vulnerabilities to radicalisation. I am excited and honoured to be a part of the Gates Cambridge community.



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