GATES Cambridge

THE GATES CAMBRIDGE YEARBOOK 2014

UNIVERSITY OF CAMBRIDGE

PATRONS

In 2012, Bill and Melinda Gates generously agreed to become Honorary 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.

CONTENTS

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 1,329 scholarships to citizens of 101 countries. During the 2014/15 academic year there will be over 200 Scholars from 44 countries studying and researching a wide range of subjects in Cambridge.

The class of 2014/15 consists of 95 outstanding Scholars from 28 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.

FOREWORD

Many congratulations on the exceptional achievement of having been awarded an extraordinarily competitive Gates Cambridge Scholarship. You have arrived in Cambridge to begin what I hope will be a highly successful and fulfilling period of postgraduate study and research.

You have not only joined the vibrant community of Gates Cambridge Scholars, but also your University Departments, Faculties, Institutes or Research groups where you will conduct the majority of your studies. 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. There is much to learn about the complex nature of Cambridge. We at the Gates Cambridge Trust office, as well as current Scholars, will do everything possible to help you make the transition to the extraordinary collegiate University that you have now become members of.

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 organized by the Trust, many organised by the Scholars, some focused on your professional development and an increasing number that will bring you into contact with Gates Scholar Alumni and the Alumni Association. 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 to enrich your time in Cambridge.

The wonderful generosity of the Bill and Melinda Gates Foundation's gift to the University has provided you with a unique opportunity to study in Cambridge. Eventually and all too quickly, you the Gates Cambridge Scholars of 2014 will graduate and join a growing and ambitious global network of leaders, having the responsibility and privilege to shape the future and fulfill your commitment to improving the lives of others. I wish you every success in doing so and in warmly welcoming you to Cambridge.

Professor Barry Everitt FRS
Provost

TRUSTEES, OFFICERS AND STAFF

TRUSTEES

Professor Sir Leszek Borysiewicz, FRS
Vice-Chancellor of the University of Cambridge and Chair of the Gates Cambridge Trust

Dr Mimi Gardner Gates
Former Director, Seattle Art Museum and Yale University Art Gallery

Dr Andrew Robertson
UC Berkeley School of Law, and Gates Cambridge Scholar 2001

Professor Susan Smith, FBA
Mistress of Girton College and Honorary Professor of Social and Economic Geography, Cambridge

Martha Choe
Chief Administrative Officer, Bill and Melinda Gates Foundation

Professor Mary Sue Coleman
President, University of Michigan

Dame Barbara Stocking DBE
President, Murray Edwards College, Cambridge

Dr David Runciman
Reader in Political Thought at Department of Political Science and International Studies, University of Cambridge and Fellow of Trinity Hall, Cambridge

Andrew Thompson, MBE (Honorary Treasurer)
Fellow (and Senior Bursar Emeritus) of Magdalene College, Cambridge

OFFICERS

Professor Barry Everitt FRS (Provost)

Ruth Bennett (Director of Finance)

Lucy Milazzo (Programme Administrator)

Usha Virdee (Accounts Assistant)

Dr Jonathan Nicholls (Secretary)
Registrary of the University of Cambridge

Jim Smith (Programme Director)

Joanna Hughes (Programme Assistant)

Mandy Garner (Commuications Officer)

GATES CAMBRIDGE **SCHOLARS' COUNCIL** 2014–2015

The Gates Cambridge Scholars Council supports the aims of the Gates Cambridge Scholarship to create a network of responsible global leaders. Drawing on the experiences and aspirations of the entire Gates community, the Council strives to enrich the academic, social, and professional lives of all scholars. The council does so by organizing the orientation and induction programme for new Scholars, and through various events in Cambridge and further afield. These include a Gala in the fall, academic programming, and social outings across the year.

Current officers of the Gates Cambridge Scholars' Council and details of their roles are listed below.

Devani Singh

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

Paul Bergen

Treasurer; The Treasurer oversees the finances of the Council and assists new scholars with setting up their bank accounts upon arrival.

Albert Arhin

Communications Officer; The Communications Officer is the conduit for assembling and distributing information to and about the scholar community.

Krzysztof Franaszek

Academic Affairs Officer; The Academic Officer's primary aim is to faciliate a thriving academic culture, through research clusters, fora, and workshops.

Isaac Holeman

External Officer; The External Officer is responsible for promoting good relations between scholars and local and global communities.

Zoe Stewart

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

Catherine Gascoigne

Community Officer; The Community Officer solicits ongoing feedback from Scholars and coordinates professional development programming.

Anna Kathryn Kendrick

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

Victor Roy

Alumni Officer; The Alumni Officer works closely with the Gates Cambridge Alumni Association to connect the scholar and alumni communities.

Bo Shiun Lai

Editor-in-Chief; The EIC is reponsible for internal and external publication of scholar articles and other content.

Rebekah Scheuerle

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

Collin Vanburen

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

Musa Chunge

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

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.

The GCAA is funded by and fully aligned with the strategic aims of the Trust: its Board of Directors work to ensure that Alumni continue to feel part of the Gates Cambridge community upon completion of their degree.

Nathan George (2003)
Co-Chair

Andrew Gruen (2008)
Secretary

Nicholas-Jacomo (Max) Macaluso (2006)
Treasurer

Emily Rose Jordan (2009)
Director of Annual Events

Stella Nordhagen (2008)
Director of Membership (Europe / Africa / Middle East)

David Bard (2003)
Director of Professional Development and Public Interest

Greg Jordan (2007)
Director of Technology

Mamta Thangaraj (2003)
Co-Chair

Lauren Zeitels (2006)
Director of Operations

Usha Chilukuri (2009)
Director of Media Relations

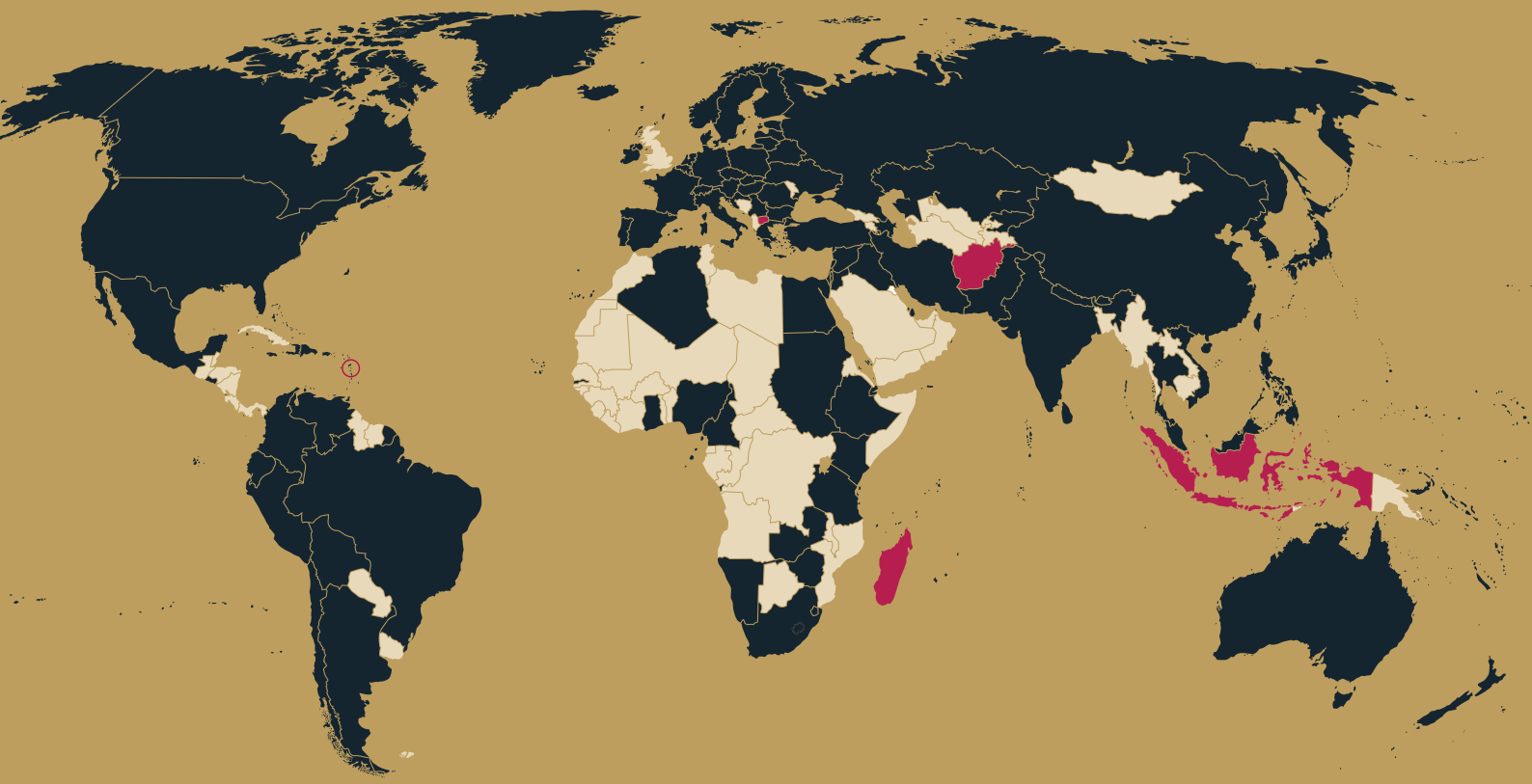
Laura Hughes (2006)
Director of Membership (North America / South America)

Rebecca Saunderson (2012)
Director of Membership (Asia / Southeast Asia / Australia)

Eliza Ridgeway (2009)
Director of Professional Development and Public Interest

BUILDING
A GLOBAL NETWORK

This year we welcome 5 new Scholars from Afghanistan, Dominica, Indonesia, Madagascar and Macedonia – countries which have not previously represented our ever expanding Gates Cambridge global network, which now totals 101 countries



KEY

- 2001–2014 Countries represented
- Countries not yet represented
- New countries represented in 2014

INDONESIA
Sabrina Gabrielle Anjara
PhD Public Health and Primary Care,
Queens' College

Indonesia is South-East Asia's biggest economy and most populous country, with over 40% of our people below 25 years old. As the first Gates scholar from Indonesia, I hope to inspire young Indonesians to aim high and make a difference to our country. This truly humbling and life-changing accomplishment will not be possible without God's blessings, the support of my family and friends, and the generosity of the Gates Cambridge Trust.

DOMINICA
Jerelle Joseph
PhD Chemistry, Churchill College

Whenever I tell people I am from Dominica, they often think I mean the Dominican Republic. Being the first Gates Cambridge Scholar from a relatively unknown part of the world is a huge accomplishment for my nation and myself. Earning this scholarship presents a great opportunity for building new linkages between my nation and other parts of the world. I am eternally thankful to the Gates foundation for their generosity.

AFGHANISTAN
Abdul Sofizada *(deferred until 2015)*
PhD Chemistry, Churchill College

This is an opportunity and a dream that only the Gates Scholarship programme would help me realize and turn into reality. I am delighted and feel honoured to have been selected for this prestigious scholarship and leadership programme as the first participant from Afghanistan. As most of you may know, I come from a country with immense challenges and numerous achievements over the last decade and so. A country that has experienced three decades of civil war, ongoing insecurity, developmental and regional challenges; a

MACEDONIA
Afrodita Nikolov
PhD Education, Wolfson College

It's a real anchor to know you can be given the trust to do what you want in the best possible ways, although you come from Macedonia or from Aromanian minority. Hence, my example has made other scholars and people hopeful for the progress of Macedonian society. This puts me in the sobering position that what you do translates into staying true to others and yourself and vice versa.

MADAGASCAR
Herimanitra Patrick Rafidimanantsoa
MPhil Conservation Leadership,
Robinson College

I feel honoured and privileged to be part of such prestigious and influential community and to be able to work with and learn from the best minds at Cambridge University. This lifetime opportunity will definitely shape my future. I am confident that my story will inspire many talented Malagasy out there who share the same vision which is to improve the lives of others through their knowledge and network.

country yet known for its natural beauty, diverse ethnic landscape, rich culture and history, and a dynamic youth population with a lot of potential for leadership, progress and positive energy. By becoming part of an university with a world-class reputation and a scholarship scheme that nurtures potential future leaders from various nations, I will contribute, as a concerned global citizen, not only to domestic/national causes but also regional and global, particularly towards the development of education sector in fragile and conflict-affected countries.

David Abugaber-Bowman

USA

COURSE IN CAMBRIDGE
MPhil Theoretical and Applied Linguistics, Wolfson College

PREVIOUS UNIVERSITY
Princeton University

I was born in Mexico but moved to Texas as a child. My background in a bilingual household first inspired me to study linguistics at Princeton University. Today I am interested in how new experimental methods such as fMRI, EEG, MEG, and mass online questionnaires allow us to test linguistic theories from the 20th century like never before, and how these can be applied to the field of second language acquisition. The way I see it, an individual language teacher may teach somebody how to fish, but a psycholinguist could one day help teach somebody how to teach somebody how to fish.In this way, I want to help give others access to the same opportunities I had as a speaker of the lingua franca in a linguistically unequal world.

INTERESTS: Classical guitar, working out, hiking, learning new languages, chess, Chinese chess, crossword puzzles, and strong coffee.

Hanna Ajer

Norway

COURSE IN CAMBRIDGE
MPhil Theoretical and Applied Linguistics, Trinity Hall

PREVIOUS UNIVERSITY
School of Oriental and African Studies (SOAS)

I have always been fascinated by languages, and spending an amazing year in Egypt as part of my undergraduate degree really showed me how many doors learning a new language can open for you. We have so much linguistic diversity in the world, but a lot of this diversity might be lost during the next century, as the majority of the world's languages are endangered. This is not only sad for language enthusiasts like me, but might also be detrimental to the respective communities. It is normally the most marginalised communities which are in danger of losing their languages, and I want to do my part to rectify this injustice. I therefore aim to spend my time at Cambridge expanding my knowledge in all the different fields of linguistics, so that I have the necessary grounding for documenting endangered languages in the future. Through language documentation and revitalisation we can preserve the valuable knowledge embedded in the languages, at the same time as empowering communities.

INTERESTS: Playing football, going cross-country skiing, hiking, singing, dancing, listening to reggae and dancehall, going to the theatre, learning new languages.

Sabrina Gabrielle Anjara

Indonesia

COURSE IN CAMBRIDGE
PhD Public Health and Primary Care, Queens' College

PREVIOUS UNIVERSITY
King's College London

After graduating with an MSc in Organisational Psychiatry and Psychology from the Institute of Psychiatry, I spent the last two years working in Singapore, most recently as a Psychologist at the Ministry of Social and Family Development. The path that led me to Cambridge was challenging. Ultimately, the calling to make a difference outshines the sacrifices made along the way. Through my PhD project, I hope to improve the quality of life of people suffering from psychiatric conditions in Indonesia through raising awareness of these conditions, reducing stigma among stakeholders, empowering advocates, improving means to access evidence-based interventions, and promoting community-based rehabilitation. This project will be part of a multi-national WHO QualityRights Programme led by Dr Tine Van Bortel. I am truly humbled and honored to be part of the Gates Cambridge community. My vision will not be realized without this tremendous opportunity.

INTERESTS: I enjoy cooking, baking, making new friends, and mentoring young students.

Chiara Avancini

Italy

COURSE IN CAMBRIDGE
PhD Psychology, Newnham College

PREVIOUS UNIVERSITY
University of Padova

I was born and raised in a village among the beautiful Dolomiti Mountains near the city of Trento, but I studied at the University of Padova where I obtained a BA in Psychology and an MA in Clinical Psychology. During my studies, I developed an interest in difficulties experienced during schooling and in the electrophysiology of mathematical cognition. My PhD research at the Centre for Neuroscience in Education will be at the confluence of these two interests. I will study the characteristics of the physiological reactions of students experiencing high anxiety in relation to mathematics. In particular, I will focus on gender differences and I will assess whether biofeedback techniques can be used to overcome such a difficulty. At university I taught Italian to immigrants through charities, motivated by the firm belief that learning how to speak the local language is the first step that helps in the process of integration.

INTERESTS: Reading; studying Arabic; cooking; playing the flute in a progressive rock band; rowing; travelling; cognitive neuroscience.

Helena Billington

Australia

COURSE IN CAMBRIDGE
MPhil Epidemiology, Newnham College

PREVIOUS UNIVERSITY
The University of Adelaide

I see quality statistics and the use of them in decision-making as paramount to enabling governments to make wide-reaching, positive changes to people's lives. Since finishing my honours degree in statistics in 2008, I worked on a number of projects that provided information about Australia's marginalised populations at the Australian Bureau of Statistics. This motivated me to specialise in population research. My goals are to improve the translation of statistics into policy, and to inspire future generations to use their quantitative skills to benefit our global community. I hope to achieve these goals by being an influential leader in the Australian government, and by founding a mentoring scheme involving statistical projects for developing countries. Studying an MPhil in Epidemiology at the University of Cambridge and being a Gates Cambridge Scholar are wonderful opportunities that will help me along this path and I feel very excited and privileged.

INTERESTS: Music, volleyball, dance, statistical outreach, efficient government, cultural exchange, going to markets, cooking, hiking, spending time with family and friends.

Andrea Binder

Germany

COURSE IN CAMBRIDGE
PhD Politics and International Studies, Magdalene College

PREVIOUS UNIVERSITY
Eberhard-Karls-University Tübingen

For the past eight years I worked at the Global Public Policy Institute (GPPi), an independent think tank based in Berlin. From 2011–2014, I served as GPPi's associate director heading the programs on humanitarian action and innovation in development. I conducted field research in Haiti, DRC, CAR, Uganda and Turkey. At Cambridge, I will focus on rising powers and the politics of global tax haven regulation. Tax havens are at the core of social inequality within and across countries. They help the wealthy elite to avoid taxes, shifting the burden of paying for public goods to lower income classes. Global inequality can only be addressed if Western powers and emerging economies work together because of the near-complete integration of financial markets into one single global market. Studying the regulation of tax havens, I hope to make a contribution to more tax justice and a more stable financial system.

INTERESTS: Rock climbing, gardening, arts and music.

Matthew Cassels

Canada

COURSE IN CAMBRIDGE
PhD Psychiatry, Gonville and Caius College

PREVIOUS UNIVERSITY
Queen's Univeristy

During my MPhil in Social and Developmental Psychology at Cambridge I studied the impact of the quality of children's human and pet relationships on their social and emotional wellbeing. I will take this research a step further in my PhD in Psychiatry by examining the extent to which self-harm behaviours among a nonclinical population of adolescents can be predicted by the security of their attachments to their parents and peers. Self-harm typically originates in adolescence, is addictive, socially contagious, and tends to escalate over time. As such, early interventions are imperative in order to prevent experimentation from becoming habit, incident from becoming epidemic, and harm from becoming suicide. I hope that by uncovering some of the etiological pathways to these deleterious behaviours, my research will lead to the development of more efficacious treatments and better prognoses for patients.

INTERESTS: Creative writing, literature, travel, dogs, rock climbing, and food.

Fei Chen *(Deferred from previous year)*

China

COURSE IN CAMBRIDGE
PhD Education, Darwin College

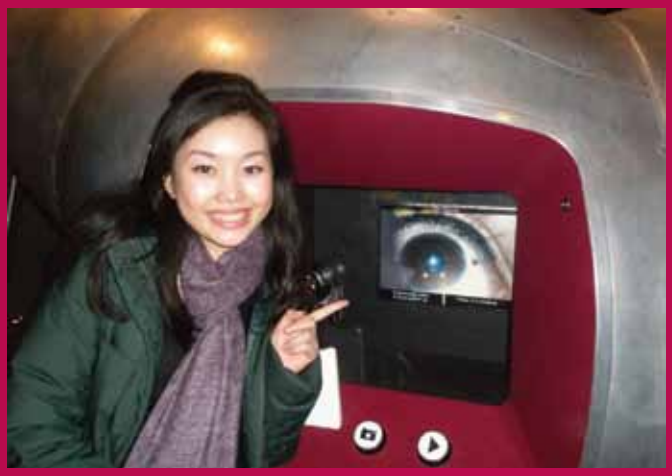
PREVIOUS UNIVERSITY
Peking University

I was born in a traditional Chinese family, where I was given a lot of guidance on traditional Chinese culture and spirits. After entering university, I received a solid educational technology instruction in the Department of Educational Technology and Communication. Because of my hard-work and excellent performance, I was awarded by National Ministry of Education as Excellent Undergraduate in Gansu Province. Thereafter I entered the Peking University where I got the chance to participate in a series of research projects, including National Teacher Professional Development Program, funded by National Ministry of Education; Joint Program of Sustaining Professional Development, funded by Qatar Foundation. Those research programs not only deepened my understanding of those topics but also my research abilities and communicating skills.

MENTAL HEALTH AND WELLBEING IN ASIA

SABRINA ANJARA

As a young student, Sabrina Anjara thought research was a bit detached from real life. She has since proven herself wrong. Her master's thesis was the first empirical study of the quality of life of foreign domestic workers in Singapore and was used by advocates of foreign workers' rights to campaign for changes to domestic workers' contracts.



Many domestic workers, all of whom are from outside Singapore and are subject to a two-year contract, had no rest days. Her research, assisted by the NGO Transient Workers Count Too, focused on workers who had rest days. It found that even they had a poorer quality of life compared to the general population.

Although the NGOs had been advocating for this before Sabrina's research findings, they were doing so without any empirical data on the well-being and mental health of domestic workers. The research made their case much stronger. In 2012 a new regulation was introduced that mandates rest day provisions in contracts for foreign domestic worker effective from 1 January 2013.

Sabrina started to look into access to mental health services as a result of her research. In many Asian countries, patients have to pay for mental healthcare. She also looked at the situation in Indonesia, which is relatively more critical. In 2012, there were only around 600 registered psychiatrists to cover a population of 250 million. The prevalence of common mental health disorders is estimated at 15% of the population at any given time and there are over 37 million people who potentially need access to mental health services. However, the level of awareness and state of infrastructure cannot meet these needs. People with severe mental illness are often put in shackles, in a local practice called pasung, due to the stigma associated with mental illness.

Sabrina was born in Jakarta and lived there until she was 14. Her parents, who are part Chinese, decided that, following race riots in the country two years earlier, it was not safe for their daughters to remain in Jakarta. Sabrina won a scholarship from the Singapore government to pursue her secondary education there. She then applied to do a year of foundation studies in Melbourne, Australia, to fast track her path to university.

After her undergraduate studies, Sabrina worked as a research assistant for the late Professor Graeme Hawthorne whose research focused on quality of life instruments. She was going to apply for a PhD, but felt she needed more on the ground experience so she took a research post at the National University of Singapore's medical school where she observed the high levels of stress experienced by the students. She applied to do her MSc at the Institute of Psychiatry at King's College in London, which offered a course on mental health in the workplace. For her research project, she chose to focus on the quality of life of foreign domestic workers in Singapore. In between her MSc and starting her PhD, she has been working as a psychologist in the Ministry of Social and Family Development in Singapore.

> "I hope my research provides mental health practitioners in developing countries with greater access to evidence-based programmes so they know what they are doing is effective for their target population."

She says: "I hope my research provides mental health practitioners in developing countries with greater access to evidence-based programmes so they know what they are doing is effective for their target population. Mental health is a growing issue everywhere and embraces not just human well-being but also human rights."

Adriana Cherskov

USA

COURSE IN CAMBRIDGE
MPhil Medical Science, Trinity College

PREVIOUS UNIVERSITY
Princeton University

I graduated from Princeton University with a B.A. in Molecular Biology and Certificates in Musical Performance and Neuroscience. Neuroscience captures my curiosity unlike anything else. My academic work, including my senior thesis research, and volunteer experiences in the clinic and beyond have motivated me to focus on developing a better understanding of the pathophysiology of autism spectrum disorders, and by extension elucidating possible molecular mechanisms which would lead to more effective treatment. At Cambridge, I look forward to pursuing an MPhil in Medical Science (Psychiatry) and investigating transcriptional and epigenetic regulation in the autistic brain in the research group of Professor Simon Baron-Cohen. Ultimately, I plan to pursue a career as a physician-scientist in order to develop more effective therapies for such complex neurodevelopmental disorders as autism.

INTERESTS: Piano, chamber music, art, traveling, teaching, French literature and food, sustainability, Chopin, gelato.

José Ciro Martínez *(Deferred from previous year)*

USA

COURSE IN CAMBRIDGE
PhD Politics and International Studies, King's College

PREVIOUS UNIVERSITY
University of Cambridge

I grew up in San Juan, Puerto Rico, where my father, a lifelong public servant, infused in me a passion for the study of politics at a very young age. My interest in the Middle East comes from my Iranian mother, who always nurtured my study of the region. It is a combination of these two formative influences that has led me to pursue graduate work in Politics at Cambridge. My proposed research project seeks to contemplate questions concerning the construction and development of political legitimacy and nationalist discourse amidst structures of dispossession. It will do so through a comparative theoretical framework that dissects the numerous intersections of nationalism, Islamism and monarchism in the construction of statehood in Morocco and Jordan during the post-independence period. The work will draw upon a broad array of Arabic-language sources and employ theoretical insights from post-structural historiography, critical anthropology and political economy.

INTERESTS: Iranian cinema, Real Madrid, water polo, cities as characters, islands, warm weather.

Pepe Clarke

Australia

COURSE IN CAMBRIDGE
MPhil Conservation Leadership, Hughes Hall

PREVIOUS UNIVERSITY
University of Sydney

I am passionate about nature conservation and sustainable natural resource management. For the past four years, I have worked as Chief Executive Officer of the Nature Conservation Council of NSW. I have a multidisciplinary background in environmental science, law and public advocacy. I have worked as a researcher, lecturer and public interest environmental lawyer in Australia, South America and the Pacific Islands, including work for IUCN, WWF, Conservation International and the Wildlife Conservation Society. Throughout my career, I have focused on the intersection between community rights and environmental protection, from public participation in environmental decision-making to community-based natural resource management. I am enthusiastic about the opportunity to study conservation leadership at Cambridge. The integration of environmental policy, business administration and leadership skills will provide a strong foundation for my future contribution to global conservation efforts.

INTERESTS: Travel, hiking, camping and cycling.

Thomas Clausen

Germany

COURSE IN CAMBRIDGE
PhD History, Trinity College

PREVIOUS UNIVERSITY
University of Cambridge

I have graduated with a BA in History from Cambridge in 2013 and continued to read for an MPhil in Political Thought and Intellectual History. My main interest lies with the role of political ideologies in history with a focus on Germany in the 19th and 20th century. In particular, I am intrigued by the interaction of ideas and arguments with the political, social and economic forces of 'real' history. My Bachelor thesis focussed on Ludwig Woltmann, who attempted to fuse neo-Kantianism, Marxism and Darwinism before turning to the emerging völkisch movement. For my MPhil, I went back to Johann Gottlieb Fichte and Friedrich Buchholz, who agreed that the French Revolution and the rise of Napoleon marked a watershed for the history of political thought, but strongly disagreed with regard to the consequences. Building upon this work, my PhD will focus on the emergence of 'liberalism' in Prussia from 1799 to 1830.

INTERESTS: Politics, effective altruism, Taekwondo, turn-based strategy games, Swedish pop music and Weimar Classicism.

Adam Cowden

USA

COURSE IN CAMBRIDGE
MPhil Planning Growth and Regeneration, Wolfson College

PREVIOUS UNIVERSITY
University of Notre Dame

Urban decay and geographic inequality are subjects that are close to home for me. As the oldest of 11 children, 5 of whom were adopted from struggling inner-city neighborhoods in Chicago, I have always been interested in exploring how public policy might be used to improve the lives of the world's most economically and socially excluded citizens. Mindful that most of the world's people are now living in cities, and that the global population is expected to reach 10 billion by 2050, I believe that urban poverty, inequality and exclusion are the most serious problems the world will face in the near future, and that the ability to manage our land and resources properly and efficiently will become increasingly crucial in the fight against these social ills. I hope to use this amazing opportunity to study at Cambridge to complete research on urban housing policy in the short run and to prepare for a career in public policy or community development in the long run.

INTERESTS: I play guitar and drums and also dabble in piano, harmonica, and the bodhran (irish frame drum). I also write and especially love writing sketch and standup comedy. Fitness, travel, theme parks and home/craft brewing are other interests of mine.

Terrence Cullen

USA

COURSE IN CAMBRIDGE
MPhil European Literature and Culture, Pembroke College

PREVIOUS UNIVERSITY
Amherst College

I grew up in Lexington, Massachusetts and graduated from Amherst College in 2013 with majors in French and English, having also studied at the University of Fribourg in Switzerland. I am particularly interested in the long history of poetry in French (as well as in Occitan), and at Cambridge I intend to continue the research I began in my senior thesis on the transmission, reception, and legacy of troubadour lyric in medieval Romance literatures. Outside of school, I played clarinet in Amherst's symphony orchestra, taught English in Mauritius, and raced on the ski team. Since graduating, I have worked as a paralegal in New York and am now delighted to be joining the Gates community at Cambridge.

INTERESTS: Literature, travel, music, languages, skiing.

Michael Dafel

South Africa

COURSE IN CAMBRIDGE
PhD Law, Corpus Christi College

PREVIOUS UNIVERSITY
New York University

Originating from Pretoria, South Africa, I entered a career in human rights law with the hope that I contribute to rebuilding my country following the rights violations that characterised apartheid. My education from the University of Pretoria and New York University led me to clerk at the Constitutional Court of South Africa, work on litigation before the African Commission on Human and Peoples' Rights, and provide assistance to members of constitutional drafting assemblies in the Middle East following the Arab Spring. It is however academia that is my main interest. My research to date has focused on the extent to which human rights impose obligations on non-state actors, and whether doing so can create a more equitable and just society. At Cambridge, I will further my understanding on this topic by focusing on one particular type of non-state actor, political parties. I am humbled at the opportunity to join a global network of leading minds committed to creating a better society.

INTERESTS: Writing fiction, living an active and healthy lifestyle through regular exercise, political affairs, cooking, tennis, and travel.

Ragnhild Dale *(Deferred from previous year)*

Norway

COURSE IN CAMBRIDGE
PhD Polar Studies, Hughes Hall

PREVIOUS UNIVERSITY
University College London

Born in the small city of Bergen in Western Norway, I am part of a generation whose need to act is urgent but paths unclear in the face of unfolding climate change.As an anthropologist, theatre-maker and human being,I continually rediscover the value of listening to other voices in the world we are part of. We know we need to curb fossil fuel emissions and shift our everyday practices to make a sustainable a future possible, and we know the time to engage is now. My PhD will pursue research in Greenland, where a warming climate and hope for independence opens for highly politicized agendas of resource development. I will focus on how greenlanders, in particular artists, engage with these processes and to what extent their agendas shift or are shifted by wider frameworks of geopolitics and identity-making.

INTERESTS: Walking, reading, writing, and working towards more sustainable lives. I live for my art and the freedom to live as we choose.

ENERGY SOURCE

Ritankar Das

Ritankar Das has been researching alternative energy sources for over seven years. He is also writing a book on education, has set up an NGO and is on advisory boards of several major corporations. And he has the ear of the Government, recently attending a roundtable with several senior White House officials to discuss the role of young people in promoting STEM policy.

He is about to begin an MPhil at Cambridge, but has already been accepted to do a PhD at MIT. All this and he has only just turned 19.

Ritankar was born in Kolkata, India, but he moved to the US when he was seven and grew up in south-eastern Wisconsin. He got into research at a very early age. At 12, he decided to attempt artificial photosynthesis in his kitchen with a blender after learning about photosynthesis in biology class.

Little over a year later, he had outgrown the resources at his school and started doing research on solar cells at the University of Wisconsin, Milwaukee where he was also studying multivariable calculus at university level. At 15, he was accepted as an undergraduate at the University of California, Berkeley. Three years later, he became Berkeley's youngest University Medalist (top graduating senior among over 6,000 students) in at least 100 years, the first Medalist ever from the Department of Bioengineering and the first from the College of Chemistry in the last 58 years. He was also the youngest inductee of the Berkeley Wall of Fame and has recently been inducted into the Young and Exceptionally Gifted Students' Hall of Fame.

At Berkeley, Ritankar did research on gallium nitride nanowires at the US Department of Energy, finding new ways to grow nanowires for use in highly efficient solar cells. He also did research on cellulosic biofuels at the Energy Biosciences Institute and, in particular, on the development of better solvents to break down cellulose for biofuels. In addition, he travelled to Taiwan's Academia Sinica to work on organic light-emitting diodes.

Even though he was younger than his peer group, it didn't stop him becoming involved in campus life. He set up the campus chapter of the American Chemical Society, the largest professional society in the world, worked as a graduate teaching assistant in Chemistry and set up the research journal, Berkeley Chemical Review. He also became an Academic Senator which involved making decisions about issues related to campus life and helping manage a $1.7bn budget.

"Ritankar, who graduated from Berkeley with a double major in bioengineering and chemical biology and a minor in creative writing, also set up an NGO called See Your Future which aims to get students interested in STEM subjects. He is writing a book on education and the skills gap between education and employment."

Ritankar, who graduated from Berkeley with a double major in bioengineering and chemical biology and a minor in creative writing, also set up an NGO called See Your Future which aims to get students interested in STEM subjects. He is writing a book on education and the skills gap between education and employment.

Ritankar, who has won over $500,000 in awards, has also served on advisory boards for Dell, State Farm, City of New Berlin, DoSomething.org and the USA Science and Engineering Festival. On the State Farm Youth Advisory Board, he helps award $5 million annually to service-learning projects. He also serves as an international advocate for the United Nations World Food Programme. In the last year he has been doing an MSc in Biomedical Engineering and a Whitaker Fellow at the University of Oxford, researching novel computational methods in biomedical ultrasonic imaging.

Ritankar Das

COURSE IN CAMBRIDGE
MPhil Chemistry, Sidney Sussex College

PREVIOUS UNIVERSITY
University of Oxford

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.

INTERESTS: Writing poetry, basketball, reading, swimming.

Jacqueline Davis

Australia

COURSE IN CAMBRIDGE
PhD Psychology, Clare College

PREVIOUS UNIVERSITY
University of Queensland

I come from a sub-tropical Australian city, and have strong family ties to rural and outback Australia. Having always lived in a relatively remote area, I am looking forward to the stimulation and connectedness of Cambridge. My interest in human systems and psychology was developed over a series of research projects looking at human interaction from a variety of perspectives, including criminology, developmental psychology, human behavioural ecology, conservation psychology, and cross-cultural behavioural economics. Volunteering in a women's legal aid centre inspired my passion for gender equality and interest in gender development. During my PhD I hope to learn about cross-cultural differences in gender development, and male and female societal roles, through fieldwork in a remote Pacific Island community. I am hugely excited to have this wonderful opportunity to learn and grow as part of the Gates Cambridge community.

INTERESTS: Travel, being outdoors, board games, attempting to bake, local performing arts.

Sonya Davey

USA

COURSE IN CAMBRIDGE
MPhil Social Anthropology,
St Catharine's College

PREVIOUS UNIVERSITY
University of Pennsylvania

As the daughter of two Indian immigrants living in the United States, I visited India every summer since fourth grade. India, its culture, religion and societal norms hold a special place for me. It is where I learned Sanskrit, worked as a volunteer in slums and gained insight into the societal preference for boys over girls, leading to the practice of female feticide. At Cambridge, I will pursue an MPhil in Social Anthropology, with a focus on understanding and solving the problem of female feticide. At The University of Pennsylvania I triple majored in Global Health, South Asian Studies, and Biology. My research was focused on women's health in India, specifically, female feticide/sex-selective abortion. I have started a social venture called Ultrasafe Ultrasound, which aims to curb female feticide through innovative ultrasound technology that automatically blurs the genitals in ultrasound images.

INTERESTS: Community service, Sanskrit, Hindi cinema, yoga, dance, traveling.

Floris de Vries

Netherlands

COURSE IN CAMBRIDGE
PhD Biological Science @ MRC CBU,
Jesus College

PREVIOUS UNIVERSITY
Radboud Universiteit Nijmegen

I have done my Bachelor's in Liberal Arts and Sciences at University College Utrecht in the Netherlands, including a semester at the University of Edinburgh, Scotland. I subsequently studied Cognitive Science at the École Normale Supérieure in Paris, France, and completed an MSc in Cognitive Neuroscience at Radboud Universiteit Nijmegen in The Netherlands. Throughout my studies, I have always been particularly fascinated by language in all its aspects and diversity. At Cambridge, I will embark on a PhD at the MRC-CBU, in which I will investigate how neuronal oscillations in auditory cortex aid listeners to perceive speech in challenging listening situations. In addition, I hope to be able to bridge gaps between different academic disciplines, and to meet people from all walks of life to jointly enjoy how much fun (and how relevant) scientific thought is, no matter the topic at hand.

INTERESTS: Hiking, cultural outings, cooking, reading literature and non-fiction, languages, music.

Surrin Deen

Trinidad and Tobago

COURSE IN CAMBRIDGE
PhD Radiology, Trinity Hall

PREVIOUS UNIVERSITY
University College London

I am a graduate of King's College London and University College London with degrees in medicine and medical physics/ bioengineering. I have worked as a doctor in the National Health Service before applying for a PhD at Cambridge. I will be based in the Department Radiology at Addenbrooke's Hospital and explore new methods of using magnetic resonance imaging in oncology to detect and study cancers. I have a strong interest in multidisciplinary scientific work, particularly the application of technology to medicine. Clinical trials on my research topic are set to begin next year and this promises to lead to rapid progress in the field.

INTERESTS: I enjoy several sports and play squash, cricket, chess and baseball regularly. Other hobbies include mathematics, robotic prosthetics and campaigning for equality in healthcare.

Tariq Desai

South Africa

COURSE IN CAMBRIDGE
PhD Genetics, Magdalene College

PREVIOUS UNIVERSITY
University of Cambridge

As a student at the University of Cape Town (UCT), I became increasingly interested in genetic variation between people and what it might mean for our susceptibility to disease. As well, it fascinated me that the study of our genomes can inform our account of the history of our species. These impulses drew me to study fundamental questions in human evolution. Charles Darwin famously abhorred mathematics, but thought that those fluent in it seemed to be endowed with something like "an extra sense". Correct or not, I've long been captivated by the language, and took undergraduate degrees in mathematics at UCT, followed by a master's degree at Cambridge in the area. As a Gates Scholar, I will be reading for a PhD in evolutionary genomics, studying the way complex demography influenced the patterns of gene flow in ancestral human and primate populations. My inquiry will inform estimates of some of the fundamental parameters and timescales of human evolution.

INTERESTS: Libraries and the bookshelves of others, museums and mountaineering, things political, jazz.

Rafael Dernbach

Germany

COURSE IN CAMBRIDGE
PhD Modern and Medieval Languages: German, King's College

PREVIOUS UNIVERSITY
University of Cambridge

I grew up in Fulda, a small town in central Germany, where I wrote my first article for a local newspaper at the age of fifteen. Since then, I strongly believe that societies need a critical public to prevent abuses of power. This conviction led me to work as a journalist, parallel to and after my undergraduate education at University College Maastricht. I wrote as a freelancer for several media outlets in Germany, including ZDFinfo, Zeit Online and Welt. Further, I became a mentor and instructor for young journalists. This belief in the preventative capacity of a critical public also motivates my research in Cambridge. I will analyze how documentary methods have been appropriated by fictional formats, and how documentarians can react this repurposing. Ideally, my research will establish a framework for audio-visual documentary literacy in the 21st century, and in so doing, contribute to the maintenance of an informed public, despite today's rapidly-shifting media landscape.

INTERESTS: Traveling, hiking, yoga, electronic music, theatre, art spaces, languages, living culture, rituals, cooking, DIY, science-fiction, science-faction.

Shannon Esswein

USA

COURSE IN CAMBRIDGE
MPhil Biological Science (Biochemistry), Churchill College

PREVIOUS UNIVERSITY
University of California, Los Angeles

I graduated from the University of California, Los Angeles in 2013 with a B.S. in Physiological Science. As an undergraduate, my research on immunoglobulin light-chain amyloidosis stimulated my interest in examining protein structure to understand mechanisms of disease. At Cambridge, I will investigate the biochemistry and structural biology of non-homologous end joining, a repair system for DNA double strand breaks. In cancer cells, this mechanism is used to escape the impact of radiation therapy, indicating that inhibiting the repair system could be an effective target in combination therapy. In addition to using structure-guided fragment-based screening to determine small molecules that inhibit DNA ligase, I will study the structure of ligase in complex with DNA to understand the mechanism of end joining. As an aspiring physician-scientist, I hope to use biomedical research to advance treatment options and improve patient care.

INTERESTS: Writing, gymnastics, hiking, animals, reading, cooking, playing guitar.

CLEAN WATER IS A HUMAN RIGHT

SHAKKED HALPERIN

Arsenic contamination of groundwater in Bangladesh has poisoned millions of people. Shakked Halperin's research will seek to find new sustainable, affordable ways to secure safe water supplies using synthetic biology. It will build on earlier work he has done on nano-materials in China and on his desire to combine his artistic and engineering knowledge in the service of real life problems.

Shakked, who was born in St Louis, Missouri, and was not sure before entering university if he wanted to do engineering or the arts and was leaning more towards art school. However, the year after leaving high school he went to Israel where he volunteered to work with young Ethiopian Jews in Israel. He decided that engineering would give him the chance to have the most impact. While in Israel, he was involved in several arts projects, including a 30-foot painting for the Ethiopian community which is still hanging in the local city hall. It depicts the people he has worked with travelling through the Sudanese desert to get to Israel and once they get there. Some 4,000 Ethiopian Jews died making their way to Israel. "It's the most powerful thing I have done," he says.

From a family he describes as "very Israeli", he was thinking of enlisting in the Israeli army, but at the last minute changed his mind and thought engineering was a better use of his skills. He applied late to the University of Missouri and began a degree in chemical engineering before switching to biological engineering in his second year. In the summer of that year he won a place on a National Science Foundation Research Experience for Undergraduates biology programme at the University of California at Berkeley.

At first he was intimidated by the fact that many of those taking part were from top universities, but he ended up leading his project because of his creative skills. He found the research environment stimulating and was excited by the fact that there was a role for creativity in engineering.

> "He was also interested in having an impact outside his own country. In his first year he joined Engineering without Borders and in his third year he was a project leader on a waste water treatment project in Honduras."

He was also interested in having an impact outside his own country. In his first year he joined Engineering without Borders and in his third year he was a project leader on a waste water treatment project in Honduras. His team tried to make the waste water treatment facility sustainable using local materials.

As a result of his experience in Honduras, Shakked travelled to China through a National Science Foundation international research experience for undergraduates programme in the summer his last semester. He was looking to develop a sustainable nano-material that could purify water. The material breaks down organic material in water when it is hit by the sun. In China he created a new structure which would increase the surface area covered by the material so increasing its efficiency. However, he soon realised that the production costs of nano-materials made them out of reach for use in developing countries so he started looking for a more sustainable engineering practice which combined biology and engineering and switched his focus to synthetic biology. He applied for an MPhil in Biological Science at the University of Cambridge and will work on a research collaboration which is looking to develop an arsenic biosensor.

Irene Falk

USA

COURSE IN CAMBRIDGE
PhD Clinical Neurosciences,
St John's College

PREVIOUS UNIVERSITY
Georgia Regents University
(Medical College of Georgia)

I graduated from Duke University in 2011 with a concentration in biochemistry and completed two years of medical school at the Medical College of Georgia, where I will return after completing my graduate studies. My graduate course will examine the immunomodulatory application of stem cell-based therapies in the treatment of neurodegenerative disease, focusing specifically on primate models of multiple sclerosis. I am beyond excited to become a member of the Gates Community and look forward to finding out everything I have to learn from my fellow classmates.

INTERESTS: Painting, dance (Chinese traditional, Middle Eastern, capoeira), languages (Russian, French, Spanish).

Stephen Filippone

USA

COURSE IN CAMBRIDGE
MPhil Physics, Churchill College

PREVIOUS UNIVERSITY
Johns Hopkins University

I grew up in Los Fresnos, Texas on the southern border of the USA. I speak Spanish and am very proud of my Mexican heritage. I attended university in Baltimore, MD studying Materials Science and Engineering. The city of Baltimore, with its rich history, has become a second home to me. In my undergraduate career, I have worked on a wide variety of materials science related questions from improving the strength of cement, to simulating the fracture of amorphous polymer systems, to creating hybrid organic-inorganic p-n junctions. At Cambridge I will be focusing on understanding charge transfer in organic solar cells in an effort to improve their efficiency. Organic solar cell technology is rich with not only academic discovery but also huge potential to improve the lives of people living without access to electricity.

INTERESTS: Education reform, cooking, dancing, jazz and folk music (playing and listening), travel and adventure, biking and soccer, sailing, things I have not yet done.

Ashley Fidler

USA

COURSE IN CAMBRIDGE
MPhil Chemical Engineering and Biotechnology, Churchill College

PREVIOUS UNIVERSITY
The College of William and Mary

As an undergraduate studying chemistry and biology at the College of William and Mary, I have had the opportunity to pursue several different research projects that span a spectrum of subjects from developmental biology to physical chemistry. As I have worked to understand the mechanisms regulating stem cell maintenance or to develop an assay that assesses small molecule-microRNA interactions, I have been impressed by the power of scientific research to not only reveal new information about our environment, but also to integrate ideas from disparate disciplines to generate novel solutions for our most difficult problems. At Cambridge, I will work to further develop spectroscopic techniques for the study of protein aggregation relevant to Parkinson's disease in the Laser Analytics research group in the Department of Chemical Engineering and Biotechnology. I am honored to be able to undertake this project with the support of the Gates community.

INTERESTS: I enjoy listening to and making music, reading books, watching movies, hiking, travelling, and spending time with my family and friends.

Krzysztof Franaszek

USA

COURSE IN CAMBRIDGE
PhD, Pathology, Churchill College

PREVIOUS UNIVERSITY
University of Cambridge *(MPhil Gates Cambridge Scholar)*

Currently working towards an MPhil in Biological Science.

INTERESTS: I am an avid reader of The Economist as well as a zealous lightweight rower.

Allyson Freedy

USA

COURSE IN CAMBRIDGE
MPhil Chemistry, Jesus College

PREVIOUS UNIVERSITY
Harvard University

Growing up in Clearwater Florida, I graduated from Harvard College in May 2014 with a degree in Chemistry. Throughout my time as an undergraduate, I was amazed by the power of organic chemistry to influence medicine. I focused my senior thesis on the activity of covalent modifiers, molecules whose unique chemical reactivity affords them a desirable biological effect. At Cambridge, I will pursue an MPhil in Chemistry under the supervision of Gonçalo Bernardes, a Research Associate at Peterhouse College. My research will focus on the chemistry used to develop targeted therapies, like antibody-drug conjugates, for the treatment of a variety of cancers. In theory, these therapies will act as targeted missiles towards cancer cells, sparing healthy cells of chemotherapies' infamous toxicity. In the future, I hope to pursue an M.D. Ph.D. to continue my exploration of the intersection of chemistry and medicine and, one day, unite these disciplines to revolutionize the treatment of cancer.

INTERESTS: I enjoy playing sports (particularly basketball), singing Broadway music, traveling, reading and spending with family and friends.

Maria Isabella Gariboldi

Italy

COURSE IN CAMBRIDGE
PhD Materials Science and Metallurgy, Trinity College

PREVIOUS UNIVERSITY
Massachusetts Institute of Technology

I was born in the Alps in Italy and grew up in a small town close to Milan. I received my bachelors degree from the Massachusetts Institute of Technology in Biological Engineering with a minor in Management. I have worked in several labs in institutions including Imperial College, École Polytechnique, the Koch Institute for Integrative Cancer Research and the MIT Media Lab. I am excited to start my PhD at the Cambridge Center for Medical Materials. I am particularly interested in implantable technologies and the development of biomaterials for use in regenerative medicine. Through my travels and extra-curricular activities, I have also grown passionate about healthcare delivery, particularly in developing countries. In the long term, I want to work towards developing low cost medical technologies to be used in resource-limited settings.

INTERESTS: I love to travel, eat and scuba-dive.

Florian Gessler

Germany

COURSE IN CAMBRIDGE
PhD Clinical Neurosciences, St Edmund's College

PREVIOUS UNIVERSITY
Goethe University Frankfurt, Germany

After completion of my MD studies, I began working as a resident in the department of Neurosurgery at the Goethe University in Frankfurt, Germany under guidance of Prof. Volker Seifert. During my residency and my recent research I became interested in the interaction between coagulation factors and tumour cells. Driven by the idea of interdisciplinary approaches to develop novel treatment strategies, I am honoured to be starting my PhD project in the laboratory of Dr. Stefano Pluchino in the Department of Clinical Neurosciences with the generous support of the Gates Cambridge Trust. My research focuses on the interaction between neural stem cells and the immune system. In the future, I want to combine my passion for clinical and experimental research to improve the treatment of patients as a surgeon-scientist.

INTERESTS: Fencing, skiing and contemporary arts.

Margaret Gilroy

USA

COURSE IN CAMBRIDGE
MPhil Nuclear Energy, Churchill College

PREVIOUS UNIVERSITY
United States Naval Academy

I am honored to be joining the Gates community to study for an MPhil in Nuclear Energy at Cambridge. Nuclear Energy has the potential to serve as a clean, cost-effective baseline source in a diverse, global energy profile. The first steps toward this desirable end state are two-fold: to establish safe, long-term nuclear waste disposal methods, and to garner informed societal support for the responsible use of nuclear energy. At Cambridge, I will focus on these challenges, and consider the safety mechanisms employed by the US Navy's submarine fleet, evaluating their potential for application in the civilian sector. I will then complete a year of technical nuclear power schooling and eventually serve as an officer on nuclear submarines. I hope this unique combination of experiences will allow me to contribute to the nuclear energy technologies and policy that could potentially transform the global energy industry and, subsequently, the world's economic and political landscape.

INTERESTS: Marathon running, cooking, Spanish language, youth fitness, hazelnut coffee, travelling, 19th century classic literature, beach volleyball, woodworking.

CHANGING ATTITUDES TO SCIENCE

JERELLE JOSEPH

Jerelle Joseph believes passionately in the power of teaching and of science. Her ambition is to raise the level of science in the Caribbean and show science students there that their work can have international impact.

Jerelle will do a PhD in Chemistry and will use atomistic modelling to investigate variable pathogens such as influenza and HIV. She says: "Rapid mutations of these viruses pose a huge problem for vaccination. Our aim is to predict the structures of these pathogens and to link this to their antigenic properties. My hope is that our findings can be applied in the development of viable vaccines for these viruses."

Jerelle was brought up in the small village of Vieille Case in the countryside of Dominica in a family which emphasised the importance of education. Jerelle decided to work as a teacher for a year before she went to university so she could apply for a scholarship. Without it she would not have been able to afford university unless she worked for several years and saved up. She threw herself into the job, staying up until 2am doing lesson plans and giving extra classes at school, including laboratory sessions. She coached individual pupils, including one from her village who had been struggling. Jerelle says: "At the end of my first year at university he sent a message on Facebook to say he had passed the end of school exams. It made my year. I saw the impact I could have on people's lives, that I could make people believe they could do things. That is what I love about teaching."

In September 2009 Jerelle started her three-year degree in chemistry. In her second year her mother fell ill with cancer and subsequently died. At the end of the first term of her third year, however, her family suffered another huge shock when her father died suddenly.

One of her lecturers encouraged her to apply for the University of West Indies' graduate school. In the last semester of her undergraduate degree she had done independent research on halogen bonding, working with Professor Sean McDowell, who encouraged her to apply to Cambridge. It is a relatively new field and Jerelle was Professor McDowell's first student to focus solely on halogen bonding, the non-covalent chemical interaction that occurs between a halogen atom and a Lewis base such as ammonia. The field has potential for application in areas such as crystal engineering and drug design.

"My dream is to become a professor of computational chemistry and to lead my own research group in the Caribbean. I hope to raise the standard of scientific research in my region and to inspire others to do the same."

Jerelle decided to apply to continue the research and broaden it to encompass sigma-hole bonding for an MPhil in Chemistry starting in 2012.

She says her masters research has been fairly theoretical, given that halogen bonding is an emerging field. She adds: "From our research we believe a lot of generalisations are being made about sigma-hole and halogen bonding and that certain things do not fit with these generalisations."

Jerelle plans to return to the University of West Indies to teach after completing her PhD. She says: "My dream is to become a professor of computational chemistry and to lead my own research group in the Caribbean. I hope to raise the standard of scientific research in my region and to inspire others to do the same."

Alina Guna

Canada

COURSE IN CAMBRIDGE
PhD Bio Sci @MRC Lab for Molecular Biology, St John's College

PREVIOUS UNIVERSITY
University of Toronto

I completed my B.S. in Neuroscience and Cell and Molecular Biology at the University of Toronto. During my studies, I got the opportunity to work in a variety of labs. I have previously built MRI coils to image the breaking of the blood brain barrier, worked to find conserved molecular markers that trigger the plant innate immune system, investigated how the brain perceives visual interference, and examined the genetic underpinnings of Parkinson's disease. Eventually, I became fascinated by the effects of ageing on the brain at the protein level. At Cambridge, I will be examining the underlying mechanisms that cause protein aggregation in neurodegenerative diseases. Specifically, I will be studying the coupling of biosynthetic and degradation pathways of secretory and membrane proteins. I hope that my work will not only inform clinical practice and aid in the development of novel therapeutic approaches, but also lead to a better understanding of a fundamental molecular pathway.

INTERESTS: I love travelling, hiking, reading, and good conversation.

Shakked Halperin

USA

COURSE IN CAMBRIDGE
MPhil Biological Science (Pathology), Churchill College

PREVIOUS UNIVERSITY
University of Missouri

At Cambridge, I will develop water pollutant sensors. My pursuit to secure safe global water supplies began while working on the reconstruction of a failing wastewater treatment system in Honduras. I then travelled to Beijing to create a new material that sustainably purifies water when illuminated. Meanwhile, researching biological engineering at UC Berkeley and the University of Missouri gave me an appreciation for the mechanisms that sustained living systems for billions of years at a level of complexity unparalleled by human innovation. The emerging field of synthetic biology harnesses these mechanisms to design new biological systems for useful purposes. I believe synthetic biology is a promising approach to create water pollutant detection technology. At Cambridge I will use synthetic biology to help engineer a microorganism that changes color in the presence of unsafe mercury or arsenic levels, offering afflicted populations a route to identify safe water supplies.

INTERESTS: Painting, food, traveling, percussion, meeting new people, and obviously science.

Victoria Herrmann

USA

COURSE IN CAMBRIDGE
PhD Polar Studies at Scott Polar Institute, Pembroke College

PREVIOUS UNIVERSITY
Carlton University

I first grew interested in the nexus of human rights, climate change, and images as an undergraduate at Lehigh University researching uranium mining and the influence of its visual representations on international perceptions of aboriginal rights abuses. Upon graduation, I moved to DC to research transportation, cities, and climate policy as a Junior Fellow at the Carnegie Endowment for International Peace. Leaving one capitol for another, I returned to studying the political power of visual narratives as a Fulbright Student in Ottawa, examining Inuit art in an ecologically changing Arctic at Carleton University. At Cambridge, I will continue this work by demonstrating how visual imagery creates and sustains contested, often-unjust visions of Arctic development through a PhD in Polar Studies. Through my work as a Gates Cambridge Scholar and beyond, I hope to advance a more comprehensive, equitable view of, and in turn policy for, those most exposed to environmental change.

INTERESTS: Getting lost in cultures and treks, watching football and singing Broadway tunes with friends and family, discovering new art galleries, and playing tennis.

Brooke Elena Husic

USA

COURSE IN CAMBRIDGE
MPhil Chemistry, Churchill College

PREVIOUS UNIVERSITY
Washington University in St. Louis

I grew up in Glastonbury, Connecticut and am a recent graduate of Washington University in St. Louis. As an undergraduate I studied chemistry, mathematics, and German; I also published in the field of theoretical phonology. For the past year, I have been investigating "de novo" protein structure prediction. I look forward to conducting related research with the Wales Group at the University of Cambridge, where I will apply energy landscape theory to protein folding. I hope to elucidate the connection between protein folding pathways and statistical structure prediction methods in order to benefit both theoretical pursuits as well as their applications. After earning my MPhil, I plan to pursue my PhD in the theoretical subfield of physical chemistry.

INTERESTS: Languages, numbers, running, eating, sarcasm.

Evelyn Jagoda

USA

COURSE IN CAMBRIDGE
MPhil Biological Anthropological Science, Churchill College

PREVIOUS UNIVERSITY
Columbia University

I first developed a passion for the study of human origins and genetics in high school in Westchester County, NY. I received a BA in Evolutionary Biology of the Human Species at Columbia University and at Cambridge will be pursuing an MPhil working in Dr. Toomas Kivisild's laboratory. For my MPhil project, I will be studying the genomes of people living in Southeast Asia and Siberia. The goal of this project is to examine the genetic relationships among populations in these areas and the role that gene flow and migration have played in the development of the genetic makeup of these populations. I hope to use this research to learn about the transmission of genetic material derived from interbreeding with the Denisovans, an extinct hominin species recently discovered in Siberia. In addition to my passion for this research, I have also always advocated for social and political engagement and hope to continue do so at Cambridge and in the future.

INTERESTS: Music, politics, biking, traveling.

Jerelle Joseph

Dominica

COURSE IN CAMBRIDGE
PhD Chemistry, Churchill College

PREVIOUS UNIVERSITY
The University of the West Indies

I grew up in the island of Dominica, in a village called Vieille Case. My late parents always emphasized the importance of acquiring a good education. Before attending university, I taught at my former high school; this experience deepened my desire for becoming an educator. In 2012, I graduated from the University of the West Indies with a BSc. in Chemistry and Mathematics. I am currently completing an MPhil. in Chemistry at the UWI. My research is focused on computational studies of a halogen bonding (an unusual intermolecular interaction). This interaction has the potential for applications in several fields such as crystal engineering and drug design. At Cambridge, I will be pursuing a PhD. in Chemistry and will use atomistic modelling to investigate variable pathogens such as influenza and HIV. My hope is to combine my passion for computational chemistry and teaching to study important chemical and biological molecules and to inspire young minds to do the same.

INTERESTS: My interests are photography, acting, travelling, sports (football, basketball, and netball), hiking and fashion.

Isabel Kasdin

USA

COURSE IN CAMBRIDGE
MPhil Archaeology, Sidney Sussex College

PREVIOUS UNIVERSITY
Princeton University

I became interested in questions of public memory – how groups of people with a shared past collectively construct what to remember and forget – through undergraduate work in the remembrance of slavery, Japanese-American internment, and other contentious aspects of American history. Studying History and American Studies at Princeton, I focused my senior thesis on representations of the American past at Gilded Age and Progressive Era world's fairs. I analyzed how these expositions provided spaces for Americans to symbolically negotiate their heritage and put it to social and political use. At Cambridge, through the Archaeological Heritage and Museums track in the MPhil in Archaeology, I look forward to learning how to tackle sensitive and controversial historical issues in the form of public displays. I am also excited to study how contested heritage impacts identity, conflict, and global development. Ultimately, I aim to pursue a career in museums and cultural heritage management.

INTERESTS: Musical theater, singing, camping, traveling, ice skating, watching Masterpiece Theatre, visiting museums, drinking coffee and exploring used bookstores.

Michelle Kelley

USA

COURSE IN CAMBRIDGE
MPhil Scientific Computing, Churchill College

PREVIOUS UNIVERSITY
University of Illinois (Urbana/Champaign)

I graduated from the University of Illinois at Urbana/Champaign with a Bachelors of Science degree in physics with a minor in mathematics. In the fall of 2015, I will be attending Cornell University for a PhD in physics. Prior to earning my PhD, I am attending University of Cambridge to get a master of philosophy degree in scientific computing. My dream career is a research physicist, and I specifically want to solve physical problems with advanced computations. In addition to a research career, I am going to focus on scientific outreach programs. With outreach, I want to address two problems I am passionate about: increasing the scientific literacy of the general public and closing the gender gap currently present in physics and the other hard sciences.

INTERESTS: Science, podcasts, satire, music, film, books, volleyball, water polo, new experiences, and good beers.

OUT OF THE MARGINS OF HISTORY

STEPHANIE MAWSON

The history of the transportation of convicts between Mexico and the Philippines is little studied and throws up interesting and often messy details about the nature of colonisation in the 17th century which do not fit common conceptions.

Stephanie Mawson came to that history as a result of travelling around Latin America as an undergraduate and deciding to do her honours thesis and later her MPhil, which included the role of indigenous Filipinos in the Spanish military, on the historical links between Mexico and the Philippines.

She says: "I was always struck by how often the Philippines was excluded – not just from Latin American history, but from Pacific and global history – despite having played such a pivotal role in global development. This made me realise that marginalisation is a reality not only in the sense of geo-politics or global economics, but also in terms of how we understand global historical development."

For her PhD Stephanie will look more at social organisation amongst indigenous Filipinos and study a broader sweep of south east Asia, taking in the trading networks between different countries and the politics of different indigenous communities in the 17th century.

Stephanie grew up in Melbourne and did her undergraduate degree at the University of Melbourne. Halfway through her degree she took a year out to travel around Eastern Europe and Latin America. It was this trip that introduced her to the Spanish empire and the history of colonialism. When she returned to Australia she moved to Sydney and finished her degree at the University of Sydney focusing on early colonial history in the US and European colonialism.

At Sydney Stephanie co-founded the University of Sydney History Students' Society. The Society, which published its own journal called Past Imperfect, aims to encourage students to participate more meaningfully in their department and in the development of the history curriculum. She then set up the History in the Making Journal Association, a non-profit organisation which produces an online history students' journal and promotes collaboration and community building amongst history students nationally. The journal is now in its fourth year and has a broad readership, partners with 10 Australian universities and involves the participation of nearly 100 students as volunteer reviewers and editors.

At the end of her course, Stephanie moved to Mexico for six months to do her honours thesis on the transportation of convicts between Mexico and the Philippines, focused on what happened in Mexico. She found sources about what was happening in the Philippines there.

When she had finished her honours thesis Stephanie wanted to have some time out of academia. She had been involved in many campaigns around public education and migrant and refugee rights and became a union delegate while working as a casual worker at a museum. Her union work led to a job as a researcher in the National Tertiary Education Union which represents academics and professionals at universities.

After that Stephanie joined the union United Voice and did research on issues ranging from low pay and tax justice.

While she has been working she has been doing an MPhil for the last three years. She says her honours thesis raised a lot of questions. She wants to focus more on what was happening in the Philippines and on the social side of Spanish colonisation.

Vincent Kim

USA

COURSE IN CAMBRIDGE
PhD Physics, Selwyn College

PREVIOUS UNIVERSITY
Washington and Lee University

At Washington and Lee University, I obtained a B.S. in physics, a B.A. in global politics and was part of the Shepherd Program for the Interdisciplinary Study of Poverty and Human Capability. I am interested in how communities can implement technological innovation to promote sustainability while eliminating poverty. At Cambridge, I plan to study the fundamental physics behind polymer semiconductors in order to improve the efficiency of organic solar cells. This research could lead to cheap, flexible, lightweight solar cells that would allow us to harness solar power in more convenient ways to meet the energy demands of people who live far from electric grids. After my PhD degree, I plan to continue developing sustainable energy technology and to help make that technology accessible to communities that are off the grid and economically marginalized.

INTERESTS: Tennis, learning languages, music (I play percussion), traveling, soccer, chess.

Stephen Kissler

USA

COURSE IN CAMBRIDGE
PhD Applied Maths and Theoretical Physics, King's College

PREVIOUS UNIVERSITY
University of Colorado Boulder

Born and raised at the foot of the Rocky Mountains in Castle Rock, Colorado, I completed my Master's degree in Applied Mathematics just a few miles north at the University of Colorado Boulder in 2014. At Cambridge, my PhD research will involve mathematically modelling influenza epidemics, in order to better understand the disease's transmission and to predict which control measures (such as vaccination, travel advisories, and school closures) will most effectively slow or stop an outbreak. I hope that this will ultimately lead to a career in mathematical epidemiology, emphasizing in preventing emerging infectious diseases that cross over from animal to human hosts. In addition to research, I also love to teach mathematics, and I hope to find ways to do so during my time at Cambridge and over the course of my career.

INTERESTS: I enjoy playing the violin, reading short stories, taking photos, learning languages, and having long dinners with friends.

Neha Kinariwalla

USA

COURSE IN CAMBRIDGE
MPhil Modern Society and Global Transformations, King's College

PREVIOUS UNIVERSITY
Stony Brook University

I grew up in a small beachside town about an hour away from New York City. I've always had a fascination in human interactions and the impact these interactions can have on an individual's health. During my bachelors in Sociology and International Studies, I founded the "The Humanology Project", an organization dedicated to destigmatizing illnesses through the use of multi-author blogs and an interactive support forum. It is offered as a course at Stony Brook University through three departments. The website focuses on neurological illnesses that are particularly stigmatized in society, and is completely student-run (something I am particularly proud of!). At Cambridge, I plan on conducting a 'factor-finding' pilot study on epilepsy and reproduction to identify factors that appear to be particularly relevant to the decision-making process about parenthood among British epilepsy suffers. I hope that my work will help in narrowing the treatment gap that exists in epilepsy.

INTERESTS: Traveling, innovative ideas, mixed martial arts, thought provoking talks, spending time with family, and sketching.

Romilde Kotze

South Africa

COURSE IN CAMBRIDGE
PhD Chemical Engineering, Sidney Sussex College

PREVIOUS UNIVERSITY
The University of Strathclyde

I first became interested in prosthetic heart valves during my final year studying mechanical engineering at the University of Pretoria, South Africa. I had at the time been working full-time for a medical device design and development company and had the great fortune of working with practicing surgeons. This sparked me to study further and complete my Masters in Biomedical Engineering at the University of Strathclyde, Glasgow. My academic interests include novel biomaterials and blood-implant fluid-structure interactions. I continue to be intrigued by the human body and the extent to which medical devices contribute to a better quality of life not only for the individual treated but also for their family and society at large. I hope that my research at Cambridge, designing and developing a growth potential paediatric prosthetic heart valve, will contribute to this field.

INTERESTS: Rock climbing, hiking, travelling, gardening, violin making, bizarre hat collecting.

Fabrice Langrognet

France

COURSE IN CAMBRIDGE
PhD History, St John's College

PREVIOUS UNIVERSITY
Ecole des Hautes Etudes en Sciences Sociales, Paris, France

Before studying at Cambirdge, I served for four years as a judge in the administrative branch of the French judiciary. I specialized in immigration and asylum cases, a field I had previously discovered as a volunteer in a French NGO providing help to asylum-seekers. In addition, I have also worked as a speechwriter for the President of the French Republic, as a member of the editorial board of an international affairs newsmagazine, as an expert for the French Ministry of Culture on legal issues raised by digital arts, and as a teaching assistant. My personal interests and my previous experience has led me to conduct research in modern history of migrations. At masters' level, I examined the interethnic identifications of Rhenish immigrants in New York City at a time of national constructions (1865–1914). In a similar vein, his PhD project shall focus on Paris immigrants at the same period, while resorting to a more pronounced socio-legal approach.

INTERESTS: Basketball, modern poetry, Italian songs of the 1960s.

Nicholas Levine

USA

COURSE IN CAMBRIDGE
MPhil History, Philosophy and Sociology of Science, Clare College

PREVIOUS UNIVERSITY
Yale University

My research at Cambridge will examine how the social sciences have created and constrained political and economic agency, particularly during the 20th century. In the past, I have done research on particle physics, the classification of government documents, and the history of prediction. I have also developed and taught courses to middle schoolers on poetry and the history and politics of New Haven. My ultimate goal is to become a history and social studies teacher, and to incorporate the lessons of the humanistic study of science and technology into secondary school curricula. To that end, I am also interested in the future in studying and developing pedagogical techniques that inspire laughter, critical thought, and political engagement. I grew up in New York City and often miss riding its subways when I'm away.

INTERESTS: Other major interests include science fiction and catchy tunes.

Noa Levin

Israel

COURSE IN CAMBRIDGE
MPhil European Literature and Culture, Trinity College

PREVIOUS UNIVERSITY
Tel Aviv University

I grew up in Jerusalem, a city which on one hand holds incredible cultural and historical wealth, and on the other, is stricken by an always tense political situation. The twofold character of the city formed my engagement in social and political issues, alongside my interest in culture and aesthetics. In my studies in Tel Aviv University I majored in Film, focusing on screenwriting and directing, and Philosophy focusing on ethics and aesthetics. I wrote and directed three short films, all of which dealt with ethical and political questions, and the relation between the individual and society at large. The last film I directed, "The Intruder" describes a unique relationship a social worker develops with an at-risk teenager she works with, which leads her to question her moral values. I am fascinated by the connection between language, ethics and aesthetics and this is what I would like to examine in my proposed MPhil Thesis in Cambridge.

INTERESTS: Film, Art, Traveling, Music, Books, Writing, Dancing, Yoga.

Sheina Lew-Levy

Canada

COURSE IN CAMBRIDGE
MPhil Human Evolutionary Studies, Fitzwilliam College

PREVIOUS UNIVERSITY
McGill University

After two years studying survival skills and cultural mentoring at Wilderness Awareness School near Seattle, WA, I completed a degree in anthropology at McGill university, focusing both on African indigenous groups and Canadian First Nations. At Cambridge, I hope to study how hunter-gatherer children learn the skills needed to survive in their environment, in order to infer how our human ancestors did so as well. I hope that this research culminates in a better understanding of the evolutionary roots of learning, in order to help make changes to the schools that serve children in the western world, and in indigenous communities alike.

INTERESTS: Spinning and knitting wool, practicing friction fires, wild harvesting food, and playful exploration.

RETHINKING EDUCATION

ARIF NAVEED

When he was growing up in a village in south Punjab in Pakistan, Arif Naveed was surrounded by a family who believed in the importance of education. He excelled, but as he got older and moved on to secondary school and university he started to question why he had done so well while other bright students in his school had dropped out of the education system.

What had happened? This question has shaped his career in education research and his desire to reform the education system to make it truly transformative for the poorest in society.

Through his PhD he plans to go back to basics and test the assumption that education is the best way out of poverty.

Arif's childhood experiences of education in a poor rural part of Pakistan have been crucial in shaping his research. Born in a small remote village in south Punjab, his parents – and older siblings – have played a key role in his education. His father was head teacher of the local primary school which was a four kilometre walk away. At the school, around 100 pupils studied in just three rooms. The windows were broken and there were just three teachers covering six grades. Arif was the youngest child at his secondary school and moved to college to study pre-medical sciences in grade 11. His family were keen for him to become a doctor, but he chose to study Economics at Bahauddin Zakariya University. He moved to Qaid-i-Azam University for his masters then started his career in rural development at the National Rural Support Programme.

Arif then joined the MPhil programme in Econometrics at the International Islamic University in Islamabad. However, he soon felt that the problems the poor faced in Pakistan were cultural and social rather than economic. In 2006, he transferred to the University of Bath to do an interdisciplinary masters in international development before joining the think-tank sat up by him, the Mahbub-ul-Haq Human Development Centre.

> "In 2012, Arif co-authored his first book which highlighted the stark regional disparities in the incidence of multidimensional poverty in Pakistan."

In his second year he started work on a University of Cambridge project led by Professor Madeleine Arnot, studying developing countries in Africa and Asia. He spent two years assessing how education affected the social and human development of poor communities in Pakistan.

Since then he has been working with policymakers. He was also invited to contribute to the Ninth Five-Year Plan of Pakistan on education, employment and income distribution and started working on a new multi-dimensional model of poverty.

After completion of the Cambridge project, Arif joined another think-tank, the Sustainable Development Policy Institute, in 2010. His research on curriculum content and religious diversity, which highlighted discrimination against religious minorities in textbooks and teaching, contributed to textbook reform. In 2011 Arif was asked by the UK's Department for International Development to help design Punjab's education reform programme for 2012–2018. It was DFID's largest single education project in the world.

In 2012, Arif co-authored his first book which highlighted the stark regional disparities in the incidence of multidimensional poverty in Pakistan. Since then, it has been widely used by the federal and provincial governments, the Pakistan Planning Commission, UN agencies and various NGOs in the design of their development projects. He is writing his second book, has been working with DFID on a study of policy research institutions in Pakistan and did an MPhil in Educational Research, Education and Poverty at Cambridge.

Reid Lidow

USA

COURSE IN CAMBRIDGE
MPhil Development Studies, Queens' College

PREVIOUS UNIVERSITY
University of Southern California

As an undergraduate studying International Relations and Political Science at the University of Southern California, I developed an interest in Burma's political emergence and conducted independent research there on three occasions. As a Development Studies student at Cambridge, it is my goal to help transform the talk of Burma's shift to a democratic federalist system from rhetoric to reality while also researching ways in which Burma can lift itself out of poverty. Additionally, I hope to elevate Burma research by establishing a journal featuring in-depth and sophisticated coverage of the country, which has historically been underserved in academic literature. I believe that academic research and the individuals who undertake it can be a force for social good, touchstones by which we all can make a difference in the world. I'm honored to be joining the Gates Cambridge community, made up of scholars who recognize the innate worth of all individuals, regardless of where they live.

INTERESTS: Volunteering in Los Angeles inner-city schools teaching International Relations courses, running, reading and flying.

Jeffrey Lockhart

USA

COURSE IN CAMBRIDGE
MPhil Multi-Disciplinary Gender Studies, Jesus College

PREVIOUS UNIVERSITY
Fordham University

I graduated from Fordham University in 2013 with a bachelors in computer science and women's studies, having written my thesis in queer ethics, and in 2014 with a masters in computer science and a thesis in data mining. The following summer, I became a Data Science for Social Good fellow at the University of Chicago. Since 2012, I have also been conducting a sociological study of sexual and gender minority students. These seemingly disparate fields are theoretically entwined: data mining, like queer theory and sociological methods, fundamentally asks how we create meaning from experiences and observations. My work at Cambridge will continue in this vein and explore the ways emerging public discourse about gays and lesbians both creates and limits possibilities for understanding the experiences of sexual and gender minorities. This project is important both substantively and as a vehicle for my continuing inquiry into the theory and methods of knowledge production.

INTERESTS: Spicy things, new places, architecture, word play, and coffee. Meaningful work and mildly-manic states.

Stephanie Gabriela Lopez

USA

COURSE IN CAMBRIDGE
MPhil Latin American Studies, Pembroke College

PREVIOUS UNIVERSITY
California State University, Fresno

I was born and raised in California and hail from a big Salvadoran family. My research interests include social movement theory, democratization, citizenship and immigration especially as they pertain to Latin America and the Middle East. I recently graduated from California State University, Fresno where I majored in political science and mass communication and journalism. As an undergraduate, I had the opportunity to gain experience as a researcher, intern for a California congressman and serve as a media correspondent for a number of local newspapers. I also volunteered at a local community church where I served as a teacher and mentor to children and youth. I am driven by the belief that one of the the greatest goals in life is to actively work toward bettering society, whether through education, volunteer work, research or other nonviolent means. I feel extremely blessed to have been chosen as a 2014 Gates Cambridge Scholar and look forward to embarking on this new journey.

INTERESTS: Spending time with family and friends.

James Mackovjak

USA

COURSE IN CAMBRIDGE
MPhil Energy Technologies, Churchill College

PREVIOUS UNIVERSITY
United States Naval Academy

As the son of a U.S. Naval Submarine Officer, I have had the opportunity to grow up in numerous locations throughout the United States, and most recently in Silverdale, Washington. As an avid cyclist, runner, and outdoor-enthusiast, I have developed a deep commitment to environmental issues and am distraught at the liberality that carbon-based fuels are consumed. I graduated with a Bachelor of Science in Systems Engineering from the United States Naval Academy. At Cambridge I will be pursuing an MPhil in Energy Technologies, hoping to curtail the effects of anthropogenic climate change and to tackle the myriad of energy challenges that the world faces through development, testing and evaluation of practical engineering solutions. As a Naval Officer, I am especially interested in discovering which low-carbon renewable energy sources are the most practical, efficient, and economical to decrease the petroleum-dependency of the Navy and to meet the energy demands of the world at large.

INTERESTS: Civilian-military relation studies, innovation within the military, international relations and triathlons.

Laura Marcus

USA

COURSE IN CAMBRIDGE
MPhil Education (Thematic route), Clare Hall

PREVIOUS UNIVERSITY
Yale University

Over the past few years I have worked with and founded educational institutions that provide students with opportunities to engage in hands-on democratic self-governance. As one deeply concerned about the decline of civic participation in developed democracies, these experiences have changed the way I think about political life and the way we prepare young people to take leadership in it. I am passionate about creating new ways to make civic education less rote and more experiential, and I am excited to explore possibilities for this innovation through the MPhil in Politics, Development, and Democratic Education at Cambridge. I hope to draw on this education in my future career: helping schools structurally integrate democratic practices into their administration and pedagogy, creating programs that give young people meaningful governance experience, and empowering students for lives of active civic engagement in their communities and world.

INTERESTS: Hiking and backpacking, Argentine tango, looking things up in field guides, reading novels, reciting poetry, cooking, running, and cross-country skiing.

William Marks *(Deferred from previous year)*

USA

COURSE IN CAMBRIDGE
PhD, Materials Science and Metallurgy, St John's College

PREVIOUS UNIVERSITY
Harvard University

While a student at Harvard University, I completed a BS in Biomedical Engineering, and an MS in Biomedical Engineering. My research throughout college included designing medical devices for dialysis patients, new filtration systems for biological fluid disposal, and focused ultrasound work for chemical treatment and biological applications. I dedicated much of my time serving as Statistician for the Harvard Varsity Football Team and Chairman of the Institute of Politics Fellows Selection Committee, among others. In addition, I co-founded American Aptitude, a non-profit, non-partisan group dedicated to improving and promoting civic education throughout the United States. I spent much of the past year in India as a Fulbright Scholar designing low-cost medical devices and working on public health projects. I hope to be able to transfer much of my work in the lab to practical applications in the clinic to help improve access to quality, affordable healthcare solutions worldwide.

INTERESTS: Traveling and molecular gastronomy.

Stephanie Mawson

Australia

COURSE IN CAMBRIDGE
PhD History, Wolfson College

PREVIOUS UNIVERSITY
University of Sydney

I'm a history graduate from the University of Sydney with a strong interest in studying global history from the perspective of ordinary people. My research focus is the early modern Spanish empire, which is an interest I developed after travelling extensively through Latin America. My PhD thesis will examine the experience of empire in the Philippines and broader Spanish Pacific from the vantage point of non-Europeans. I strongly believe that we study history not just to understand the past but also to engage in the kind of future that we want to create. My research aims to break down some our commonly held assumptions of how global history developed by examining the frontiers of early modern empires that have often been marginalised within broader historiography. I have been active in projects of community building among history students in Australia and worked as a researcher at a large trade union on campaigns that fight the inequality experienced by Australia's lowest paid workers.

INTERESTS: Hiking, camping, travelling, snorkelling, music, unionism and social justice activism.

Madeline McMahon

USA

COURSE IN CAMBRIDGE
MPhil Early Modern History, Trinity College

PREVIOUS UNIVERSITY
Columbia University

I graduated from Princeton University in 2013 with a BA in History and minors in European Cultural Studies, Latin, and Medieval Studies. After that, I spent a year in New York City reading Greek and Latin texts as a member of Columbia University's post-baccalaureate program in Classics and working on an upcoming exhibit on annotated books at the New York Society Library. My research interests lie at the intersection of scholarship, religion, and intellectual history in early modern Europe, particularly England – a time and place where decisions about history and theology could be matters of life and death. I'm interested in the ways in which sixteenth- and seventeenth-century churchmen drew on ecclesiastical history as they defended and shaped the nascent Church of England. I look forward to working further on this and related subjects at Cambridge. I am also passionate about education and advocating for the humanities and the arts.

INTERESTS: Historiography, rare books and manuscripts, coffee, classics, religion, travel, classical music, literature.

PEACE THROUGH THE ARTS

Afrodita Nikolova

What is the role of the arts in reducing ethnic tensions and how can marginal voices be heard? Afrodita Nikolova's research investigates how arts interventions can build peace. She has a personal interest since she comes from Macedonia where tensions between Albanians and security forces in 2001 spilled over into violence which she says has left "a huge scar" on Macedonian society.

Her PhD in Education will explore the role of arts interventions in developing critical thinking around issues of identity and intercultural communication.

It will build on her masters, also at Cambridge, which covered Macedonian student responses to the Merchant of Venice in Macedonia. "I was interested in students' reaction to the play's treatment of religious tensions in the 17th century and whether the text might trigger reflection on ethnic tensions in Macedonia. Some of them had witnessed violence on religious and ethnic grounds at first hand. I felt the issue of prejudice was the elephant in the room in our formal education system and was interested in how arts interventions could work in Macedonia."

Afrodita was born in the small town of Shtip in eastern Macedonia just two years before the country won independence from the former Yugoslavia. She was interested in language from an early age, but the turning point for her came when she started her degree in English language and literature at Ss Cyril and Methodius University in Skopje. One of her visiting lecturers in creative writing was an American underground poet, Sean Thomas Dougherty. "His poetry was riveting and focused on marginal groups in society, but it was his approach to the creative process that was interesting to me," she says. "He also taught me to appreciate the musicality of poetry."

At the end of her second year Afrodita's poetry pamphlet "Omaynina" won a national award – the "Lesnovski Dzvona" prize. With a colleague she co-founded a literary magazine 'Sh'. She is still an editor on the magazine. It runs short story competitions which are judged by well known Macedonian writers and holds regular poetry readings of material published in the magazine.

By her fourth year she became more interested in exploring identity issues after reading literature by African American and Jewish writers and was in part drawn to marginalised groups because she is Aromanian. During her degree, she wrote an essay reflection on her ethnic identity and prejudice for a writing competition. It led to her being selected to travel to Sarajevo to attend workshops with Macedonians, Albanians, Serbs and Bosnians on how to resolve ethnic tensions in the Balkans peacefully.

"Her PhD in Education will explore the role of arts interventions in developing critical thinking around issues of identity and intercultural communication."

Afrodita began leading creative writing workshops in her home town with students and young people and volunteered at the Centre for Social Initiatives in Skopje, working mainly with marginalised young Roma people.

After graduating she worked for a year as an English language teacher. She started a masters in English literature in Macedonia before receiving a scholarship to do an MPhil at Cambridge from the Ministry of Education and Science in Macedonia. She was drawn to the Cambridge course as it focused on the role of education in the arts and was interdisciplinary. After her masters, she needed time to reflect and returned to Macedonia where she started a creative writing programme and taught English. She will be the first Gates Cambridge Scholar from her country.

Oliver McMillan

New Zealand

COURSE IN CAMBRIDGE
PhD Engineering, Clare College

PREVIOUS UNIVERSITY
University of Auckland

In 2013 I completed my Bachelor of Engineering at the University of Auckland. I specialised in Civil and Environmental engineering and developed a passion for environmental engineering in my final years. My work for an environmental consultancy since completing my undergraduate study has confirmed this passion and given me valuable practical engineering experience, and I am excited to contribute to the industry through research. My PhD will focus on contaminated site remediation, which is becoming an increasingly important global issue as usable land becomes a more valuable and limited resource. Biochar is engineered charcoal made from a range of materials and has properties that cause it to remove pollutants from soil and water. I will develop biochar from pine sawdust and I intend for this to improve the overall sustainability of the industry by shifting the reliance from landfills to using renewable, easily accessible waste products for remediation.

INTERESTS: Cricket, rugby, football, international development, science and maths, Spanish.

Ananya Mishra

India

COURSE IN CAMBRIDGE
MPhil Modern South Asian Studies, Corpus Christi College

PREVIOUS UNIVERSITY
University, Hyderabad

Ever since as a child when I spent sleepless summer nights watching performers enacting episodes from oral epics in the temple courtyard of Sonepur, I have been intrigued by literature and memory. Early on in my life I realized I was part of a culture where memory was living, well within one's physical reach. This inspired me to do my MA thesis on cultures of memory in Odisha, as part of a visionary project initiated at the English and Foreign Languages University, Hyderabad. I researched on communities living in Western Odisha and their cultural forms to design an audio-visual project that creatively digitized mnemocultures through a webpage. Unfortunately these cultures are threatened by oblivion due to displacement of the people from their native lands. Through my M.Phil in Modern South Asian Studies at Cambridge I would like to study how displacement affects these communities and their cultural memories.

INTERESTS: I love reading (fiction and poetry), writing, traveling, teaching and downing endless cups of chai.

Riaz Moola

South Africa

COURSE IN CAMBRIDGE
MPhil Advanced Computer Science, King's College

PREVIOUS UNIVERSITY
University of Edinburgh

As a student in the unique Informatics department of the University of Edinburgh, I developed a keen interest in Machine Learning, especially applications to Natural Language Processing and Bioinformatics. In 2012, I founded the organisation Hyperion Development to address the wide educational divides that still exist in my country, South Africa, today. Hyperion runs a massive open online course for training South African undergraduate students in a variety of programming languages and computer science research topics. Hyperion also works with the South African government to address declining student numbers in Computer Science, by training teachers in the high school Computer Science syllabus. At Cambridge, I aim to leverage my Machine Learning and Natural Language Processing background to create self assessment and tutoring (SAT) tools that can extend Hyperion's scaleable educational projects. I believe such tools can lay the foundations for greater equality in South African society.

INTERESTS: Reading science fiction/fantasy, squash, massively multiplayer online games and communities, computer science education, building and managing organisations.

Samuel Mosonyi

Canada

COURSE IN CAMBRIDGE
MPhil Criminology, Darwin College

PREVIOUS UNIVERSITY
University of Guelph

I have long believed in the importance of engaging with civil society and have endeavoured to be an active participant in the life of my university and community. I believe strongly that both the legal and academic communities need to engage actively with society. Consequently, I have authored over forty op-eds on law and politics in national, local, and student newspapers. For my contributions to public discourse I was recognized as one of my community's Top 40 Under 40. At Cambridge, I will be pursuing an MPhil in Criminology. Afterwards, I plan to attend law school in Canada and to enter the legal profession as an academic practitioner. I am passionate about increasing access to justice to ensure that all members of society can participate on an equal level. I am thrilled to receive this opportunity by the Gates Cambridge Scholarship.

INTERESTS: Travelling, technology, politics, jazz.

Bhaskaran Nair

Netherlands

COURSE IN CAMBRIDGE
PhD Materials Science and Metallurgy, Trinity College

PREVIOUS UNIVERSITY
University of Cambridge

During my bachelors at the University of Texas at Dallas, I was exposed to the sheer beauty of physics and the elegance of the tools it uses to deconstruct and understand the natural world. In materials science, particularly device physics, this beauty and elegance comes together with a chance to address some of the serious engineering problems our society faces looking forward. During my PhD in Materials Science, I seek to explore electrically driven phase transitions and electrocaloric effects in ionic liquids and dipolar fluids. These materials, which are eco-friendly and scalable, may be the key to displacing current vapor compression cooling with more efficient and accessible electrical cooling technologies. With this research, I seek to address not just issues in energy scarcity and environmental sustainability, but also in global health, where accessible cooling and temperature regulation are crucial in maintaining healthy, pathogen free environments.

INTERESTS: Education and teaching, spending time with family and friends, trying new food, travelling, and both types of football (American and association).

Muhammad Arif Naveed

Pakistan

COURSE IN CAMBRIDGE
PhD Education, Jesus College

PREVIOUS UNIVERSITY
University of Cambridge

I grew up in an educationally disadvantaged village in South Punjab in Pakistan, witnessing various forms of inequality. With an aspiration to influence public policies on poverty reduction, I trained myself at the postgraduate level in the disciplines of economics, international development, and sociology of education. Over the last eight years, I have been engaged in policy research and contributed to the debates on the issues of poverty, inequality, education and knowledge systems for policy making in Pakistan. By re-conceptualising schooling and poverty from the perspective of the poor, my doctoral research examines if education is the best way out of poverty and towards social mobility. It explores the extent to which schooling enhances the social, economic and political participation of the poor in rural Pakistan. This interdisciplinary project is aimed at generating insights that will help reform education so that it plays a transformative role in the lives of the poor.

INTERESTS: I love travelling and listening to the Sub-continental instrumental and classical music.

Sandra Neoh

Australia

COURSE IN CAMBRIDGE
MPhil Clinical Science, Translational Med and Therapeutics, Clare Hall

PREVIOUS UNIVERSITY
The University of Melbourne

I graduated from the University of Melbourne in 2006 with a Bachelor of Medicine and Surgery and recently completed specialty training in Endocrinology. The MPhil in Clinical Science (Translational Medicine) provides me with the opportunity to explore the process of developing new therapies and technologies from their scientific origins at the bench top into daily clinical practice. My research will focus on the use of new technology for pregnant women with Type 1 Diabetes. In the future, I hope to be able to contribute to advancing the care of patients with diabetes and obesity, twin medical conditions that are growing exponentially and resulting in significant ill health and wellbeing.

INTERESTS: Reading, travel, yoga, being an aunty to my niece and two nephews.

Emma Nicholls

Australia

COURSE IN CAMBRIDGE
PhD History, Clare Hall

PREVIOUS UNIVERSITY
Monash University

Focusing on the late medieval period, my research investigates the intersection between economic and political structures of control and the workings of imagination. I am interested not just in what we think, but how we are able to think. I completed my MA at Monash University, an Australian university with particular strengths in medieval and early modern studies. Having myself come to university via Open Learning and a community-based adult learning centre, I am passionate about ensuring that people overcoming disadvantage of all kinds have access to education. This year, it was my great delight to co-direct the inaugural Australian Youth Humanities Forum, an initiative which aims to combat perceptions that non-vocational degrees like Arts only offer viable career options to the privileged. A key aim of my time at Cambridge is to develop better ways of sharing the excitement and potential of research in the humanities with the broader community.

INTERESTS: Cooking for friends, discussing life with my bordercollies, getting out in nature, literary tourism (the Haworthmoors of the Brontë sisters have been a highlight so far).

POVERTY, ECONOMICS AND THE IMPORTANCE OF THINKING LOCAL

GUSTAVO PAEZ

When Gustavo Nicolas Paez started work at the Colombian Ministry of Health two years ago the first issue he dealt with was pricing health insurance. The insurance system assumed people go to hospital when they are sick, but this does not work for everyone, for instance, the very diverse indigenous communities living in the jungle.

In the jungle it can take three or four days to get to hospital. "If you are sick you don't want to spend four days in a very small boat going to hospital," he says. It made more sense to get the doctors into the jungle to do health prevention work and ensure people got to hospital before they became very sick.

Gustavo, who begins an MPhil in Economic Research at the University of Cambridge in the autumn, is interested in economics and tackling inequalities, but he says economic models need to be adjusted in order to be applied to real world situations.

At the Health Ministry, he has worked on almost every topic from financing health systems to climate change. Because of this experience, he recognises the importance of an interdisciplinary approach to real world problems. In health this means focusing on what makes for wellbeing as well as preventing disease.

Gustavo's interest in economics and inequality began at an early age. He was born in Bogota – his father is a lawyer and his mother is an engineer in the oil industry – but he spent a lot of his childhood on his grandparents' farm. There he would spend his time catching frogs and helping milk the cows with the children of the farm workers. The experience gave him an early understanding of inequality and a commitment to improving the lives of the poor.

He opted to do a double major in economics and industrial engineering at the Universidad de los Andes in Bogota and took maths and environmental studies as minors. He felt his two majors would give him the technical skills he needed to understand the kind of problems he was interested in. He says: "With economics I could build castles in the sky and with industrial engineering I could build them on the Earth."

His undergraduate degree lasted four and a half years and during it he signed up for summer schools abroad. He studied at Yale, Cornell, the London School of Economics and the Santa Fe Institute.

He also combined his undergraduate studies with being a research assistant in the economics department of his university.

For the research he was working with the Dean of Economics who was appointed Minister of Health. He asked Gustavo to move with him to the Health Ministry to be his adviser. While he was still finishing off the research projects, Gustavo started work at the Ministry in October 2012 and has been there ever since.

Gustavo kept up his academic work alongside his Ministry work, doing a masters in his spare time at the Universidad de los Andes. He then looked around at economics courses outside Colombia to continue his studies. "I want to learn more about different economic models, but the biggest challenge is to apply these models to local regions. They tend to be designed for developed countries," he says. He begins his MPhil at Cambridge in the autumn.

Afrodita Nikolova

Macedonia

COURSE IN CAMBRIDGE
PhD Education, Wolfson College

PREVIOUS UNIVERSITY
University of Cambridge

As ethnically Aromanian poet I am interested in the "personal" and the "social" in poetry, what Carolyn Forché called "poetry of witness". This shaped my work as English lecturer and creative writing tutor with Roma youth and university students in Macedonia. When my poetry pamphlet "Omaynina" earned the national award "Lesnovski Dzvona", I co-founded the literary magazine "Sh". I felt I was thrown into the Macedonian literary scene with the joy and caution of a child jumping on a trampoline. I did journalism, educational projects for the NGO "Izlez". I was awarded a scholarship for a Balkan ethnic tensions seminar, Sarajevo. I've now become the 2014 national slam champion. In Cambridge, I performed for elderly people at Mansel Court and organised "Arts Kaleidoscope". My MPhil explored literature for social justice. Thus, I learned of arts interventions and will be looking at their role in transforming marginal youth's identities in Macedonia during my PhD at Cambridge.

INTERESTS: Amateur acting, playing social games, a fan of Woody Allen's films, Zumba, poetry slam.

Cillian Ó Fathaigh

Ireland

COURSE IN CAMBRIDGE
MPhil European Literature and Culture, St John's College

PREVIOUS UNIVERSITY
Trinity College, Dublin

I grew up in the Burren, County Clare, in the west of Ireland. Its careful balance of beauty and isolation encouraged – or perhaps mandated – an interest in books. I am a Scholar of Trinity College, Dublin where I studied English Literature. While there, I also took a distance learning degree in Politics and International Relations with the University of London International Programmes. This has allowed me to develop an inter-disciplinary approach combining cultural, political, social, and ethical issues. Outside of that, education is a particular interest for me. I've featured in all main Irish media discussing second-level education, including writing a monthly column for The Irish Times. My research is interested particularly in the work of Jacques Derrida and how it relates to political concerns. I am especially interested in how this could apply to issues relating to Northern Ireland. I am also eager to apply Derridean ideas to Irish culture, more generally.

INTERESTS: I enjoy theatre, a variety of literatures, Irish traditional music, politics/activism/protesting, languages, and friends. I have great time for talking and tea, and regularly combine the two.

Lorna Omondi

Kenya

COURSE IN CAMBRIDGE
MPhil Management Science and Operations, Murray Edwards College (New Hall)

PREVIOUS UNIVERSITY
Massachusetts Institute of Technology

I grew up in Kenya and rolling blackouts were an issue of constant concern. It became my life's dream to ensure that our nation's energy supply became more reliable. The engineering skills I developed at the Massachusetts Institute of Technology gave me a great set of tools, which I use to understand the challenges facing the energy sector in developing economies. I look forward to using all the networks and knowledge I acquire at the Judge Business School to change the face of energy reliability in the developing world.

INTERESTS: Going for game drives in Kenyan national parks and game reserves, photography, public speaking, debate, cooking and urban dance.

Gustavo Nicolás Paez Salamanca

Colombia

COURSE IN CAMBRIDGE
MPhil Economic Research, Sidney Sussex College

PREVIOUS UNIVERSITY
Universidad de Los Andes

Most of the people have no choice about being poor, this decision comes with the cradle. Due to my life experience I consider that it is my duty to work for them, so that they can have the same opportunities in life, independently of the birth conditions. I am an economist and an industrial engineer. With them I have been able to work in diverse projects (in the health area) that promote this equality. Yet, each time I found more differences between the assumptions in which economic theory is made and the developing world. In my MPhill I want get a deeper understanding of the economic models and how can I modify their assumptions so that they can be used in these regions. In particular, I want to investigate which are the best ways to differentiate states of development and what are the needs of the people in each of them. In that way, I can formulate projects that have different start points, but end up with the same benefits for the people.

INTERESTS: Nature! I love scuba-diving, visiting conservation areas, looking for projects with animals. Also I enjoy sharing with communities: learning from their cultures and cosmologies. At last, for systemic reasons, I really enjoy talks about dinosaurs.

Andrew Parker

USA

COURSE IN CAMBRIDGE
MPhil Public Policy, King's College

PREVIOUS UNIVERSITY
Stanford University

From a young age, my mother taught me the importance of exercising the right to vote. Years later, as a volunteer on Barack Obama's 2008 campaign, I saw the challenges of voting firsthand: confusing registration forms, long lines, and malfunctioning voting machines, just to name a few. I studied election reform efforts as a Political Science major at Stanford University and continued to focus on issues of civic engagement and political participation through positions at The White House Office of Public Engagement and on the 2012 Obama campaign. As I pursue an MPhil in Public Policy at Cambridge, I am excited to deepen my understanding of policymaking and to explore the intersection of government, technology and public policy. After graduation, I hope to support the development and implementation of electoral reforms that leverage technology to make the voting process more open, accessible and efficient.

INTERESTS: Snowboarding, bowling, tennis, storytelling, crossword puzzles, stand-up comedy, reading, and traveling.

Annika Pecchia-Bekkum

USA

COURSE IN CAMBRIDGE
PhD Medicine, Pembroke College

PREVIOUS UNIVERSITY
University of Utah

In all but birthplace, I'm effectively a Salt Lake City, Utah native, but somehow managed to avoid becoming an avid skier. I started college a little early at Salt Lake Community College, then transferred to the University of Utah where I graduated with honors degrees in both Chemistry and English. I am currently working towards a Master's degree in Chemistry also at the University of Utah. At Cambridge, I will be working with Drs. K.G.C. Smith and Paul Lyons on research that will focus on the manipulation of T cell exhaustion as a therapeutic for autoimmune disorders. After my time at Cambridge, I plan on completing postdoctorate research and then attending medical school. Ultimately, I wish to specialise in paediatric immunology and treat patients as well as conduct research.

INTERESTS: I enjoy calligraphy, drawing, hiking, biking, ballroom dancing, gardening, and reading.

Elizabeth Presser

USA

COURSE IN CAMBRIDGE
MPhil Public Policy, Sidney Sussex College

PREVIOUS UNIVERSITY
Princeton University

I graduated from Princeton University in 2010 with a degree in Classics. Four days later, I moved to Khon Kaen province, six hours north of Bangkok. I spent the next two years working in northeast Thailand, the poorest and most populous region of the country. With a small grant, I co-founded an online news source focused on politics and development issues in the region. I primarily reported on a growing pro-democracy movement in the northeast and the effects of government policies on the farmers, laborers, and service workers who were my neighbors. Since moving back to the United States in 2012, I have turned my attention to domestic social welfare issues while researching a book for two journalists that explores evidence-based antipoverty programs. I am passionate about a new branch of reporting known as solutions journalism and its ability to shape public opinion around proven solutions to complex social problems such as access to quality early childhood education.

INTERESTS: Solutions journalism, Thai politics, Jit Phumisak, theater, acrobalancing, and anagramming.

Herimanitra Patrick Rafidimanantsoa

Madagascar

COURSE IN CAMBRIDGE
MPhil Conservation Leadership, Robinson College

PREVIOUS UNIVERSITY
University of Antananarivo

I hold two degrees from the University of Antananarivo, Madagascar: a BSc degree in forestry in 2009 and a MSc degree in forestry, rural development and environment in 2013. Between my two University degrees, I worked as Environmental Manager for a large private cashew growing company, called "Vergers d'Anacardes de Masiloka" (VERAMA) in north western part of Madagascar for two years. I was in charge of ensuring high environmental and social standards of the company and supporting five local communities in natural resources management. At the University of Cambridge, I will be pursuing an MPhil course in Conservation Leadership that will develop both my leadership and research skills so that I can engage with and critique science and policy in Madagascar at the highest level and in other parts of Africa. I am so honoured to be the first Malagasy to have been awarded a Gates Cambridge Scholarship and I am looking forward to interacting with the finest brains in the world during my time in Cambridge.

INTERESTS: Playing guitar, snooker, volley-ball, hiking.

GETTING CONSENSUS ON CONSERVATION

HERIMANITRA RAFIDIMANANTSOA

How can local communities be trained and supported effectively in conservation activities which may impact on their livelihoods?

Herimanitra Patrick Rafidimanantsoa, the first Gates Cambridge Scholar from Madagascar, says he has seen at first hand the problems created by not getting local communities on board with environmental campaigns.

He worked for two years as environmental manager of a cashew nut plantation in Madagascar, during which time he noted the disconnect between local communities and environmental diktats. "To them it looked like a bunch of rules with them being told 'don't do that' or 'there will be a fine if you do that'," he says. "The reasons were not justified. In some situations they might need timber to build their homes, but they are just told off. The authorities don't want to know about their hardships. Their complaints never reach anyone at the top who could change things. I think there needs to be a review of the chain of communication between local communities and policymakers."

Patrick wants to change that and will be beginning an MPhil in Conservation Leadership in the autumn.

He was born in Antananarivo, the capital of Madagascar. His parents are agronomists – his father works in the agricultural sector advising farmers on how to increase their yields while his mother is a senior manager in the field of environmental protection, advising on Madagascar's protected areas.

Patrick went straight to University after school, applying to the School of Agronomy at the University of Antananarivo where his parents had studied because of his interest in agriculture.

He did a five-year degree, specialising in forestry from the third year because he knew that many NGOs were looking to work in this area because of the country's diverse vegetation.

After graduating Patrick was keen to get practical experience and got a job as an environmental manager at a large private cashew growing company called "Vergers d'Anacardes de Masiloka" (VERAMA) in the remote north western part of Madagascar in 2010. He had to learn the local dialect as part of his job involved talking to local communities about resource management.

He was given 10,000 euros from private sponsorship and had to use the money to plant a 10,000-tree forest within a four-month time scale. It was a challenging project due to

"He worked for two years as environmental manager of a cashew nut plantation in Madagascar, during which time he noted the disconnect between local communities and environmental diktats."

the remoteness of the plantation. All the equipment for the nursery and the planting had to be imported from a nearby city and transported by dhows,. Patrick had to motivate workers, oversee the whole activity and manage the budget. The sponsor sent someone to assess the project and, due to its success, they gave a further 150,000 euros for a three-year project from 2013–2015.

Patrick left in 2012, after deciding he needed to get further qualifications to pursue his goal of becoming a policymaker. He returned to the University of Antananarivo to do a masters in forestry. During his masters he got married and his wife was then offered the chance to do a PhD in forestry at the University of Bangor. The couple moved to Wales in 2013 where Patrick did a range of jobs and translated the p4ges project's web pages into Malagasy. The project investigates whether international ecosystem service payment schemes effectively reduce poverty in low income countries like Madagascar.

Rachel Reckin

USA

COURSE IN CAMBRIDGE
PhD Archaeology, St John's College

PREVIOUS UNIVERSITY
University of Wyoming

I was born into a heritage of mountains. As a fifth-generation Montanan and a member of an avid outdoors family, I grew up hiking, biking, skiing and canoeing in the midst of the Rockies. As an archaeologist, I continue to be fascinated by the relationship between people and high places. Unfortunately, however, native communities in North America have been physically and culturally displaced from many mountainous areas they formerly occupied. Evidence for a vibrant prehistory of the mountains is mounting and in some regions of the world it has come in the form of frozen, preserved archaeological artifacts like clothing, arrows, and basketry melting from high altitude patches of ice and snow. The discovery of these artifacts – known as ice patch archaeology – is closely linked to anthropogenic climate change, as many alpine ice patches are currently at their smallest extent of the Holocene. For my PhD in Archaeology at Cambridge, I plan to continue to research the interaction between prehistoric Native Americans, alpine environments and prehistoric changing climates in the Beartooth Mountains, near Yellowstone National Park.

Gregory Reeves

USA

COURSE IN CAMBRIDGE
PhD Plant Sciences, King's College

PREVIOUS UNIVERSITY
New Mexico State University

Experiencing the tragedy of disease, poverty and starvation, both personally and in various countries, has left an indelible passion in me to pursue plant science to make a brighter future for humanity. For my Master's research, I studied the inheritance of disease resistance and spicy flavor in chile peppers, where I discovered a new gene that inhibits disease resistance, helped sequence the chile pepper genome and broke the world record for "hottest pepper". At Cambridge, I will investigate improving crop productivity by working towards transferring the more efficient C4 photosynthesis into less efficient C3 photosynthetic, yet economically important, crops – notably rice and wheat. Engineering C4 photosynthesis into C3 crops could potentially increase current yields by 50%, while adding greater nitrogen – and water-use efficiency. This would be an incredible solution to global food security and supply! Upon completion of a PhD, I aspire to become a plant breeder.

INTERESTS: Being with friends, Meeting new people, Cooking (and Eating), Gardening, Camping, Playing games, Skiing, and Traveling.

Nicholas Rice

South Africa

COURSE IN CAMBRIDGE
PhD Chemical Engineering, Magdalene College

PREVIOUS UNIVERSITY
University of Cambridge *(MPhil Gates Cambridge Scholar)*

South Africa's energy sector is characterised by an unsustainable dependence on coal. In this however, I see tremendous opportunity for the development of sustainable energy technology. At Cambridge I will be pursuing an MPhil in Advanced Chemical Engineering, hoping to reinforce my knowledge of catalysis and computational modelling, and increase my flexibility as a research engineer one day operating within the dynamic field of renewable technology. Through many previous projects and my current research in fuel cell science, I am increasingly passionate about the role chemical engineering has to play in meeting global diversification targets. I want to direct my work to developing modular off-grid electrification solutions, such as biomass gasifiers, for rural and under-developed communities in South Africa as a mechanism to stimulate social development. Advancements in the catalytic cracking of biomass-derived syngas tars could drive gasification technology towards commercialisation.

INTERESTS: Playing and listening to music, popular science, technology, conflict history, and darkroom photography.

Casey Rimland

USA

COURSE IN CAMBRIDGE
PhD Surgery, Trinity College

PREVIOUS UNIVERSITY
University of North Carolina at Chapel Hill School of Medicine

I am originally from Charlotte, NC and I completed my bachelor's degree at UNC-Charlotte, where I graduated with honors in both biology and psychology. My early research experiences led me to pursue a combined MD/PhD degree through the NIH Cambridge Scholars Program. I completed my second year of medical school at UNC Chapel Hill. Now I will begin my PhD work in the Department of Surgery at Cambridge and at the NIAID at the NIH. At Cambridge, I will work to develop methods of producing functional liver cells from adult stem cells. Then I will use these methods at the NIH to develop stem cell therapies for liver fibrosis in animal models. I am very grateful for the opportunity to spend my time at Cambridge as a Gates Scholar and an NIH Cambridge Scholar. As an aspiring physician scientist, I cannot imagine a more rewarding or enriching environment in which to train. I know my time as a Gates Scholar will continue to shape how I care for my future patients and also my research career.

INTERESTS: Volunteering at free medical clinics.

Rachel Robertson

Australia

COURSE IN CAMBRIDGE
MPhil Philosophy, Trinity Hall

PREVIOUS UNIVERSITY
University of Cambridge

Having tasted the riches of philosophical inquiry as an undergraduate, I am grateful for the chance to pursue my interests further with an MPhil in Philosophy. The works of Kant and Hume fascinate me, and I hope to use both to develop and defend a theory of the self as a living, social mind-body couple. Also, I am keen to continue the thinking I started with my BA dissertation on biological species. I am excited to see how this work can shed light on wider issues in biology, and contribute practically to conservation legislation. The open discussion that I relish in Philosophy fuels my passion to learn from others by opening up dialogue wherever I am. This is especially helpful for when I dabble in other people's specialities, like biology! I feel honoured to be able to join and learn from the Gates Community.

INTERESTS: Reading, painting, long walks, music (playing and listening), cooking for friends, apologetics and time with friends and family.

Sophie Rosenberg

France

COURSE IN CAMBRIDGE
PhD Politics and International Studies, Darwin College

PREVIOUS UNIVERSITY
University of Oxford

Raised in a bilingual and bicultural family and having lived between the United States and France my entire life, I quickly became fascinated by international politics and cooperation. For the past few years, I have worked for Amnesty International's headquarters in London and most recently in Nairobi, conducting campaigns and research on the Democratic Republic of Congo and the Great Lakes. This builds from my previous experience in the Office of the Prosecutor at the International Criminal Court and my time studying in India and Nepal with Tibetan communities-in exile, and in Argentina focusing on human rights of indigenous populations. I graduated from Brandeis University and continued my studies at the University of Oxford, completing a degree in global governance and diplomacy. Pursuing my PhD at Cambridge, I will study the politics of public international law and the International Criminal Court, the crime of aggression, and the intersection between security and human rights.

Timothy M Rudnicki

USA

COURSE IN CAMBRIDGE
MPhil Economic and Social History, Sidney Sussex College

PREVIOUS UNIVERSITY
University of Chicago

I grew up in the suburbs of Chicago and graduated in June from the University of Chicago with a B.A. in History and Economics. I began my undergraduate studies intending to study macroeconomic theory in preparation for a career in economic development. However, I soon realized that I was more interested in using the economic history of developed countries as a source of policy lessons for the developing world today. Since that realization, I have focused my studies on the economic and imperial history of England and Britain in the 17th and 18th centuries. At Cambridge, I will study the 17th century occupational structure of two very different counties in England – Lancashire in the northwest and Bedfordshire in the south – to help more precisely chart their structural development. I hope that my contribution to our understanding of the historical underpinnings of these dissimilar economies ultimately yields broader applications and policy lessons for contemporary development efforts.

INTERESTS: Food and cooking, reading, football (both types; playing and watching), exploring new places via bike, running, a good debate with friends, traveling.

Matthew Samson

Australia

COURSE IN CAMBRIDGE
PhD Psychology, Trinity Hall

PREVIOUS UNIVERSITY
University of Cambridge

In Australia I was a keen football referee. I loved trying to manage the unique flux of personality and situational factors that I encountered in every game. Over time, I came to ask 'what factors cause prosocial and antisocial behaviours?'. This question has since been the focus of my academic endeavours. At Macquarie I examined both clinically immoral psychopaths, and the situational factors that render non-psychopaths more psychopathic. By virtue of the Prime Minister's Australia Asia Award, I then examined whether the same factors cause psychopathic behaviours in Australian and Singaporean populations. Whilst on Award, I also learned about the factors that promote human flourishing, by volunteering at an orphanage in Thailand's largest slum. Most recently, I undertook a Master's degree at Cambridge, where I investigated the emotional bases of moral judgments.
In my PhD, I hope to examine the person-environment interactions that enable happiness and success.

INTERESTS: Football (playing, refereeing and watching), cricket, hiking, TED talks and stimulating dinner conversation.

PRE-HISTORY EMERGING FROM THE ICE

RACHEL RECKIN

As climate change causes worldwide temperature rises, melting patches of ice and snow are beginning to yield artefacts that have lain frozen beneath the surface for thousands of years.

These may hold the secret to how humans impacted and adapted to climate change in prehistoric times. Rachel Reckin is one of a growing number of archaeologists interested in studying paleo-climatic reconstruction and archaeology in mountain regions.

Her PhD in Archaeology will look at how people thousands of years ago adapted to climate change. While holding down a job as an archaeologist in a national forest, she has been working on a project in Glacial National Park in Montana during her holidays.

They can date organic material like ancient trees from the ice and can calculate from how tall the the types of samples grew and, from coring the ice, what the climate must have been like. They can also do a pollen analysis of plants. Researchers can then correlate the more precise ideas they have about climate change over a particular period in that region with human activities to see what impact humans had and how they responded to change. At Cambridge Rachel will continue this work, but will focus more specifically on two mountain ranges and near Yellowstone National Park.

Her PhD in Archaeology will look at how people thousands of years ago adapted to climate change. While holding down a job as an archaeologist in a national forest, she has been working on a project in Glacial National Park in Montana during her holidays.

Rachel combines her archaeological interests with an active involvement in community affairs in her home state of Montana. Rachel's family has lived for generations in Libby, which is home to a vermiculite mine. In 1999 a story broke in a Seattle newspaper about the health risks of asbestos-contaminated land in Libby caused by the mine. When Rachel returned from doing her undergraduate degree at the University

of Puget Sound in Washington, the local Centre for Asbestos-Related Disease had over 4,000 patients and several hundred people are said to have died from asbestos poisoning.

Rachel's response was to start up the Libby Legacy Project with the aim of going into schools and educating the community about the history of the mine and its legacy. She also began an oral history project, talking to miners and others in the community, some of whom died after giving interviews. The Project is now looking to put together an exhibition at a local museum.

Rachel did not take a traditional route into archaeology. She initially won a music scholarship to Puget Sound, but by the end of her second year had settled on a major in English. In her third year she went to Scotland as part of a study abroad programme. There she realised she might be able to pursue archaeology, which she had taken courses in and always loved, as a career. She took relevant courses, did a field school with the University of Montana in Yellowstone National Park and met archaeologist Professor Bob Kelly at the University of Wyoming who fought for her to be admitted to his department to do her masters. SInce graduating three years ago she has been working for the Forest Service as an archaeologist covering 2.2m acres of forest, including Native American sites. She also speaks at local schools and community groups about her work and about Native American history. "There is not a huge Native American population right in Libby so that history gets forgotten. I am passionate about bringing it to life," she says.

Simone Sasse

USA

COURSE IN CAMBRIDGE
MPhil Biological Science (Pathology), Emmanuel College

PREVIOUS UNIVERSITY
Princeton University

At Princeton, I concentrated in Ecology and Evolutionary Biology and will pursue an MPhil in Pathology at Cambridge. I am interested in studying tropical diseases and researching mechanisms for limiting their transmission. I will work in Dr. Jim Ajioka's laboratory investigating the host-parasite interaction of Toxoplasma gondii, an opportunistic pathogen that infects the immunocompromised host. Ultimately, I hope to work as a physician-scientist, integrating clinical and laboratory research for the pursuit of global health solutions. I am excited to engage in research and to meet the dynamic global health community at Cambridge.

INTERESTS: Skiing, backpacking, wilderness medicine, running, travel, and theatre.

Amirah Sequeira

Canada

COURSE IN CAMBRIDGE
MPhil History Philosophy and Sociology of Sci, Tech and Med, Newnham College

PREVIOUS UNIVERSITY
Columbia University

I graduated with a BA in History and Sustainable Development from Columbia University in 2012, where my research focused on the history of needle exchange activism in New York City. I'm fascinated by intersections between class, race, sexuality and gender with health and policy. My academic scholarship has enhanced my work as a political activist within the AIDS movement. As the National Coordinator for the Student Global AIDS Campaign in the United States, my work has focused on organizing and empowering young people to take political action against social injustice, and guiding political campaign strategy to hold governments and corporations accountable for ending the AIDS pandemic by ensuring access to medicines for all who need them.

INTERESTS: Contemporary dance, live music, cooking, exploring new places, Manchester United and the Winnipeg Jets.

Veronika Siska

Hungary

COURSE IN CAMBRIDGE
PhD Zoology, Trinity College

PREVIOUS UNIVERSITY
University of Warwick

After graduating from the Budapest University of Technology and Economics in 2012 with a Bsc degree in Physics, I decided to switch to mathematical biology on the international Erasmus Mundus Masters in Complex Systems Science programme. My research here focused on epidemiological modelling, with applications on Tasmanian Devil Facial Tumour Disease and human influenza, both fundamentally influenced by the dynamics of genetically different strains. During my PhD, I will create a spatially explicit population genetics framework to explore how different selection across the species range can affect the spread of beneficial traits, using recent genetic data. Aside from applications, such as shaping efforts in conservation ecology or searching for genes of medical importance by distinguishing between effects of demographic events and selection, it will also help us reconstruct human demographic history and understand how species can rapidly adapt to changing environmental conditions.

INTERESTS: Climbing, modern dancing, long-distance cycling, attending various seminars and soup making.

Michael Philip Sitte

Austria

COURSE IN CAMBRIDGE
PhD Engineering, Fitzwilliam College

PREVIOUS UNIVERSITY
Vienna University of Technology

I was born and raised in the heart of Vienna. In 2008, I started the BSc in Mechanical Engineering at Vienna University of Technology. I continued my studies abroad by enrolling in the TIME Double Degree programme at Ecole Centrale Paris. In Paris I developed my interest in energy-related research and, in particular, in combustion science. In 2013, I completed the MPhil in Energy Technologies at the University of Cambridge, where I researched spark ignition simulations. I then returned home to Vienna to complete the MSc in Mechanical Engineering. This included an external research project in the Institute of Science and Technology Austria, where I studied the onset of turbulence experimentally. My PhD will focus on gas turbine combustion modelling. Understanding the physical phenomena related to engine ignition, flame extinction and self-excited oscillations is crucial to allow for the implementation of future combustor designs that operate lean so as to achieve very low emissions.

INTERESTS: I am passionate about cycling. I also practice fencing, rowing and skiing. Moreover, I have a keen interest in ancient history.

Otilia Stretcu

Romania

COURSE IN CAMBRIDGE
MPhil Advanced Computer Science, Lucy Cavendish College

PREVIOUS UNIVERSITY
Polytechnic University of Timisoara

My primary research interest is the intersection of machine learning and computer vision. I have always been fascinated by science, but I find it most noble when it benefits humanity. I chose computer science, and machine learning in particular, due to its immense potential to change people's lives for the better. What fascinates me most is how applicable the field is to other seemingly unrelated areas: it allows one to detect patterns, predict future outcomes and extract knowledge. Recently, I have come to appreciate how computer vision and machine learning can meaningfully impact how we discuss medicine. Using these techniques we can look at diseases not only from a symptomatic view, but take a holistic approach where data collected on a patient – from genetic information to X-rays – can aid both diagnosis and characterization of diseases. At Cambridge I would like improve my knowledge of machine learning, and investigate how it can be used to learn more about the brain and diseases.

INTERESTS: Skiing, volleyball, hiking, theatre, opera, museums, exploring new places and meeting new people.

Michelle Teplensky

USA

COURSE IN CAMBRIDGE
PhD Chemical Engineering, Downing College

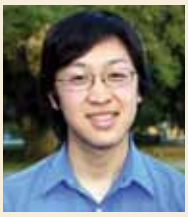
PREVIOUS UNIVERSITY
Massachusetts Institute of Technology

My passion for chemical engineering has led me to the interdisciplinary field of drug delivery and nano-based medicines. While completing a B.S. in Chemical-Biological Engineering at MIT, I had the incredible opportunity to research a variety of chemical engineering applications, including enzyme engineering, biomaterials, and nanotherapeutics. These experiences, and my internships in industry, have given me a holistic view of the field and sparked my curiosity to address it further. At Cambridge, for my PhD Chemical Engineering, I will be pursuing a project that combines novel technologies in engineering, biotech, polymer science, and biopharmaceuticals, to address the existent global problem of treating debilitating diseases with a more effective drug delivery. I am confident that the relationships, knowledge, and technical skillset I gain at Cambridge, through the opportunity from the Gates Cambridge Scholarship, will drive my future career aspiration to be a biotechnology leader.

INTERESTS: Field Hockey, snowboarding, baking (anything that has chocolate), ice hockey, and learning languages.

Eric Tuan

USA



COURSE IN CAMBRIDGE
MMus Choral Studies, King's College

PREVIOUS UNIVERSITY
Stanford University

Choral music has been an integral part of my life since childhood. Spurred by the intrepid spirit of my hometown, the San Francisco Bay Area, I seek to explore music that lies off the beaten track. This journey has taken me from medieval music, with its strikingly different conception of text and authorship, to avant-garde works examining such controversial topics as same-sex marriage or mass surveillance. Through choral music, I aim to humanize the abstract for performers and listeners alike, opening minds to different cultures and new perspectives. Since graduating from university, I have served as music director for an Episcopal church and the new chamber choir Convivium, alongside performing with San Francisco Lyric Opera, Philharmonia Baroque, and Volti. At Cambridge, I hope to combine my academic interest in early music with practical conducting training. I look forward to experiencing the university's rich musical culture and gaining a global perspective on the choral art.

INTERESTS: Travel, linguistics, hiking, history, religion, science fiction, the Estonian choral tradition.

Ella Tunnicliffe-Glass

New Zealand

COURSE IN CAMBRIDGE
MPhil Music Studies, Emmanuel College

PREVIOUS UNIVERSITY
The University of Auckland

Music and neuroscience may seem unlikely bedfellows, but research at the juncture of these two disciplines offers remarkable opportunities to investigate relationships between brain, behaviour, culture, and communication. I hold conjoint Bachelor of Science (Psychology) and Bachelor of Music (Classical Performance) degrees from the University of Auckland, New Zealand, and have recently completed an honours year in Musicology at that same university. My honours dissertation brought together my two fields of study, using electroencephalographic and behavioural measures to investigate the neural correlates of absolute pitch. Alongside this research project, I continued my studies in baroque flute performance, music editing, and musicology. During my MPhil at Cambridge, I plan to study neuroplasticity in the context of music perception and absolute pitch, and continue to explore broader topics relating to eighteenth-century music and neuroscience.

INTERESTS: Playing the flute, baroque flute, and French horn, learning new instruments, eighteenth-century aesthetics, debating, NZ literature, coffee, travel, and the brain.

Callie Vandewiele

USA

COURSE IN CAMBRIDGE
PhD Latin American Studies,
Newnham College

PREVIOUS UNIVERSITY
University of Cambridge

I was raised the oldest of six siblings first there and then just outside of Portland, Oregon. "Unschooled" until the age of 16 my foray into traditional education began with a handful of high school classes, and then a dive into Spanish language, music and biology at the local community college, where I quickly developed a taste for academic work. After graduation I worked in Guatemala where I developed an interest in women's education and the interactions between globalized culture, local cultures and the evolution of ancient traditions. Upon returning to Oregon I worked with Girl Scouts to develop leadership education for young women. In the fall of 2013 I moved to the UK to pursue an MPhil in Gender Studies in order to broaden my understanding of the link between academic theoretical work and real world impact on issues of inequality. This course will allow me to combine my passion for women's leadership development, and my desire to understand the forces that shape our identities.

Frantisek Vasa

Czech Republic

COURSE IN CAMBRIDGE
PhD Psychiatry, Churchill College

PREVIOUS UNIVERSITY
University Hospital of Lausanne

I was born in Prague and grew up in Geneva. Following a BSc in Mathematical Physics at the University of Edinburgh, I undertook an MSc in Biomedical Engineering at Imperial College London. During my MSc project, I became fascinated by the connectome – a holistic description of brain connectivity, which can be studied using complex network theory. Subsequently, I obtained a research assistant position at the University Hospital of Lausanne in Switzerland to study connectome alterations in psychiatric disease. Although most psychiatric disorders emerge in adolescence, our limited understanding of brain development during this period hinders our ability to identify maturational aberrations. This has motivated my desire to undertake a PhD in Psychiatry at the University of Cambridge, to study development of the connectome in adolescence using complex network theory. I look forward to helping characterize the link between abnormal brain maturation and the emergence of psychiatric diseases.

INTERESTS: I love travelling. I enjoy the outdoors – hiking, canoeing, skiing, snowboarding as well as skateboarding. I like reading poetry, and occasionally scribble some too.

Julia Chang Wang

USA

COURSE IN CAMBRIDGE
MPhil Modern European History,
Trinity College

PREVIOUS UNIVERSITY
Harvard University

I was born in Beijing and moved to Chicago with my parents at age 9. Because of my immigrant background and love of history, I'm studying immigrant participation during the 1960s in Great Britain and France at Cambridge in the MPhil program in Modern European History. As an undergraduate at Harvard, I studied History, Economics, and French, focusing on the history of empire and decolonization in the twentieth century. Outside the classroom, I edited for the undergraduate history research journal, sang in an all-female choir, and danced in different shows on campus. I hope to continue some of my extracurricular interests in England. After my time at Cambridge, I hope to use what I learned to pursue a career in legal academia and work in an international capacity on improving the rights of immigrant populations, particularly socioeconomic rights like education. I am excited to be part of the Gates community!

INTERESTS: Contemporary fiction, running, traveling, music, Zumba, conversations, and board games.

Madeline Weeks

USA

COURSE IN CAMBRIDGE
MPhil Geographical Research,
Lucy Cavendish College

PREVIOUS UNIVERSITY
Wellesley College

As a California native with bi-racial British and Chinese heritage, I sensed a deep commitment to promoting exchange from an early age. My research to date has focused on two commodities – chocolate and coffee – with cross-cultural and interdisciplinary overlap. I study how these commodities are linked to broader concerns like human wellbeing and ecosystem services in the context of an evolving world. In 2011 I graduated from Wellesley College in 2011 with a B.A. in Economics and Spanish. My undergraduate thesis examined the role of cacao through the dynamically changing sociocultural history of Mexico. Upon completion of this work, I returned to Mexico to study coffee – a similar yet distinctly different commodity. Supported by a Fulbright-Garcia Robles Scholarship (2013–2014), I worked in collaboration with an ongoing interdisciplinary initiative called Café In Red at the Institute of Ecology, A.C. to understand socioeconomic considerations of small-scale coffee producers in Central Veracruz.

INTERESTS: Making chocolate from bean-to-bar, trail running, yoga, cycling, cooking with local and fresh ingredients, engaging in food exchanges, and teaching.

Leah Weiss

USA

COURSE IN CAMBRIDGE
PhD Physics, Trinity College

PREVIOUS UNIVERSITY
University of Cambridge *(MPhil Gates Cambridge Scholar)*

I grew up in Cleveland, Ohio and graduated from Harvard Universitywith an A.B. in Physics. I am interested in research at the intersections of physics, chemistry, and biology. My research experiences in college have thus far focused on solar energy in physical and biological systems. In the laboratory of Prof. Roger Howe at Stanford University our goal was to decipher principles for the nanofabrication of concentrated solar thermal cells based on "bottom-up" engineering. In the laboratory of Prof. Lene Hau at Harvard University we sought to probe physical and chemical mechanisms responsible for the seeming miracle of efficient energy coupling in a biological system: chloroplast photosystem II. Understanding these complementary systems and their rules of operation define broad challenges central to future exploitation of clean energy technologies. The challenges are global.

Naomi Woo

Canada

COURSE IN CAMBRIDGE
PhD Music, Clare College

PREVIOUS UNIVERSITY
University of Cambridge *(MPhil Gates Cambridge Scholar)*

I am a pianist, harpsichordist and conductor studying Performance Studies in the Music Faculty at Cambridge. My current and former research interests have included translation studies, musical transcription, 20th-century French music, musical memory, time, mathematics and the mind. As a performer, my interests run the gamut from historically informed performance, to experimental/multidisciplinary concert experiences, to promoting works by female composers. I hold a BA in Mathematics and Philosophy from Yale College, and a MMus in Piano Performance from the Yale School of Music. www.naomiwoo.com

INTERESTS: I like being outdoors, doing crossword puzzles, exploring new places, learning languages, drinking coffee and using verbs.

Gregory Wilsenach

South Africa

COURSE IN CAMBRIDGE
PhD Computer Science, Peterhouse

PREVIOUS UNIVERSITY
University of Cambridge

Basic Questions on the limits of human knowledge have long found a natural home in philosophy. However, in the twentieth century Kurt Gödel, Alonzo Church, Alan Turning and others moved many of the more concrete forms of these questions into the purview of mathematics. It is their work that founded many modern topics in theoretical computer science and mathematical logic. My own research will concern the intersection of these two subjects, asking questions about the limitations of computation (understood very broadly) and the logical languages in which we define our objects of study. Although these subjects obviously influence our understanding of what may be done with ordinary computers, they also have a deep impact on our understanding of computation and definability more generally. Indeed, this marriage of the pure and the applied, combined with the philosophical intrigue behind so many of these questions, makes this topic uniquely interesting.

INTERESTS: Mathematics Generally (Logic, Set Theory and Theoretical Computer Science, in Particular); Topics in Philosophy, Politics and Economics; Rambling on about something I found interesting (and being obnoxious generally); Chess (and games of strategy).

Songqiao Yao

China

COURSE IN CAMBRIDGE
MPhil Geographical Research, King's College

PREVIOUS UNIVERSITY
Mount Holyoke College

As a China-born global citizen with a keen interest in promoting social and environmental justice in China, I examined China's rapid economic growth and increasing social inequality and environmental degradation from an interdisciplinary perspective. Throughout college I have taught in rural schools, fundraised and built capacity for women's organizations as an advisor for Global Fund for Women, coordinated multi-stakeholder dialogues on climate change at UN conferences. Since graduation, I worked for the environmental NGO International Rivers researching on China's global environmental footprint. In August 2012 I moved back to Beijing to help set up International River's China office, and shifted my focus on protecting rivers in Southwest China through field research, policy advocacy, and strengthening China's environmental NGOs' movement for river protection. At Cambridge, I look forward to consolidate the past three years' of advocacy work and field research, and hone my skills on different social science research methods.

INTERESTS: Yoga, traveling and learning languages, food and cooking, writing, good conversations, and pretending to make music on string instruments.

Suyang Zhang

China

COURSE IN CAMBRIDGE
PhD Biological Sciences, St John's College

PREVIOUS UNIVERSITY
Swiss Federal Institute of Technology Zurich

Born and raised in Zhengzhou, a city in the centre of China, I moved to Switzerland with my family at 15 years old. My interest in molecular biology arose during my undergraduate studies in biochemistry at ETH Zurich, leading to my subsequent MSc studies in structural biology. My Master thesis was focused on protein synthesis in eukaryotes and resulted in the successful determination of three novel structures, furthering our understanding of this critical biological process. For my PhD study in Dr. David Barford's lab at the MRC LMB, I will be working on the anaphase promoting complex (APC/C), a key player in regulating cell cycle transitions. Defects of the APC/C are frequently observed in different types of cancers, so I hope to ultimately understand the mechanistic details of the APC/C functions by engaging various structural and biochemical approaches. I am looking forward to tackling a challenging project at the LMB and meeting other outstanding scholars in the Gates community.

INTERESTS: Floor hockey, piano, painting, music, films and desserts.

CLASS OF 2014/15 BY COUNTRY

Afghanistan	1	Germany	4	New Zealand	2
Australia	7	Hungary	1	Norway	1
Austria	1	India	2	Pakistan	1
Canada	6	Indonesia	1	Poland	1
China	2	Ireland	1	Romania	1
Colombia	1	Israel	1	South Africa	6
Czech Republic	1	Italy	2	Trinidad and Tobago	1
Dominica	1	Kenya	1	United States	43
Fmr Yugoslav Rep of Macedonia	1	Madagascar	1		
France	2	Netherlands	2		

Total countries: 28

CLASS OF 2014/15 BY COLLEGE

Churchill College	12	Jesus College	4	Selwyn College	1
Clare College	4	King's College	8	Sidney Sussex College	6
Clare Hall	3	Lucy Cavendish College	2	St Catharine's College	1
Corpus Christi College	2	Magdalene College	3	St Edmund's College	1
Darwin College	3	Murray Edwards College	1	St John's College	6
Downing College	1	Newnham College	4	Trinity College	10
Emmanuel College	2	Pembroke College	4	Trinity Hall	4
Fitzwilliam College	2	Peterhouse	1	Wolfson College	4
Gonville and Caius College	1	Queens' College	2		
Hughes Hall	2	Robinson College	1		

Total Colleges: 28

CLASS OF 2014/15
BY DEPARTMENT

Applied Mathematics & Theoretical Physics	1
Archaeology Section	2
Biochemistry	1
Biological Anthropology Section	2
Chemical Engineering & Biotechnology	4
Chemistry	4
Clinical Neurosciences	2
Computer Science & Technology	3
Criminology	1
Development Studies	1
Economics	1
Education	3
Engineering	4
Genetics	1
Geography	5
German & Dutch	1
History	7
History & Philosophy of Science	2
Judge Business School	1
Land Economy	1
Latin American Studies	2
Law	1
Materials Science & Metallurgy	1
Medicine	2
Modern & Medieval Languages	3
MRC Cognition & Brain Sciences Unit	1
MRC Laboratory of Molecular Biology	2
Music	3
Pathology	3
Philosophy	1
Physics	5
Physiology, Development & Neuroscience	1
Plant Sciences	1
Politics International Studies	5
Psychiatry	3
Psychology	3
Public Health & Primary Care	2
Radiology	1
Scott Polar Research Institute	1
Social Anthropology Section	1
Sociology	1
South Asian Studies	1
Surgery	1
Theoretical & Applied Linguistics	2
Zoology	1

Total Departments: 45

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