GATES Cambridge

ANNUAL REPORT 2022

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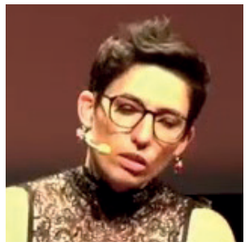

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Co-chair and Trustee of the
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FROM THE ACTING CHAIR

Professor Bhaskar Vira

I am in the privileged position to have been involved with the Gates Cambridge programme since 2006: first as an interviewer, then as a Trustee and currently as Acting Chair of the Board.

Gates Cambridge is, by every measure, an exceptional programme. It attracts and supports some of Cambridge's most outstanding and diverse graduate students who thrive at and contribute so much to the University, and then go on to do exceptional things across the world. Most importantly, each member of the scholar and alumni community is – in their unique way – meeting the aims of this historic donation from the Bill and Melinda Gates Foundation to the University of Cambridge: using their education and skills to improve the lives of others.

I was delighted to welcome Professor Eilís Ferran as Provost from October 2022. Professor Ferran and her team are already having a positive impact on the programme, including thinking and planning around further increasing diversity, providing a more structured offering to our alumni and new ways of highlighting the impact of the programme to the wider world.

All of us involved in the Gates Cambridge Scholarships are incredibly proud of the scholars and alumni that make this programme so successful – and so vital in addressing the many challenges we all face. I extend my personal good wishes to all the current Scholars and alumni – we are grateful for your commitment, and the values that you take into the world.

All of us involved in the Gates Cambridge Scholarships are incredibly proud of the scholars and alumni that make this programme so successful – and so vital in addressing the many challenges we all face.

FROM THE PROVOST

Professor Eilis Ferran FBA

If I had to sum up in one word my impression of the Gates Cambridge programme at the end of my first few months as Provost that word would undoubtedly be **community**.

My first task as Provost was to welcome the 81 new scholars who comprise the class of 2022 as the newest members of our thriving community of around 260 scholars in residence in Cambridge, from more than 60 countries. The next highlight was taking part in another of the key tasks in the Gates Cambridge year, namely the selection of the US scholars for 2023, held at the Bill and Melinda Gates Foundation in Seattle. The experience of interviewing and selecting such outstanding candidates confirmed everything I had been told about Gates Cambridge scholars' intellectual quality, commitment to positive social impact, and motivation to be part of an engaged community. I take this opportunity to warmly thank the Foundation for hosting the interviews, in particular our Trustee Amy Carter for facilitating and Conny Krause and her team for the exceptional support. My experience of participating in the international round interviews for the selection of the remainder of the 2023 class, which took place in Cambridge in March, was just as exhilarating. Conversations with alumni have further reinforced my sense of the deep bond that is forged by the Gates Cambridge programme. Some have spoken of the aspiration to improve the lives of others as a value that has stayed with them since their time at Cambridge, and that still serves as a guiding principle for their important life choices.

To ensure the scholarship is as accessible as possible, the Trust is participating in University-wide discussions about widening the pool of postgraduate applicants to the University as well as continuing to explore, with the help of our Trustees, how we can best make our own contribution to impactful outreach activity. We are very fortunate that Professor Bhaskar Vira, who as a Trustee has done so much to shape our thinking in this area, is now leading on it for the University, in his role as Pro-Vice-Chancellor for Education. The University's new Mastercard Foundation Scholars

Programme for Masters students from economically marginalised and hard-to-reach communities in Africa has proved to be a valuable catalyst for conversations between the University's associated funding bodies about our common aim of ensuring that funding is not a barrier for outstanding students who would thrive at Cambridge. I would like to give a special mention to Jim Smith, our Programme Director, for fully engaging with these important University-wide initiatives on behalf of the Trust and also for his generosity in sharing his experience of establishing a path-breaking new scholarship programme at Cambridge with those leading new initiatives.

In response to the University's widening participation efforts in relation to part-time students, our Trustees have agreed to run a three-year pilot to accept applications for the scholarships from part-time applicants from 2023 entry. Those who are nominated by departments will be assessed in the same way as full-time candidates.

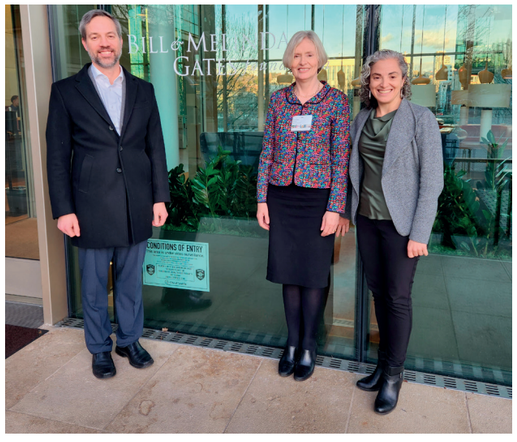
Within the current scholar cohort, the Scholars' Council has seized the opportunities presented by the relaxation of Covid restrictions to rebuild the in-person community through a mix of academic, professional development and fun events. I very much welcomed the Council's decision to include inclusion and accessibility among its priorities and the establishment of a new Equality, Diversity and Inclusion Officer. I also warmly support the current Council's 'less is more' approach in terms of activities across the year, ensuring the organisation is sustainable and resilient and those scholars who volunteer their time and energy are not overwhelmed. The Scholars' Council is integral to our efforts to create and support a vibrant scholar community in Cambridge and I take this opportunity to thank both last year's and this year's Council members for their efforts.

The strain faced by students (and staff) because of the soaring cost of living is a cause for concern across the sector and at every level within Cambridge. The Trust is fortunate to have an agile decision-making structure that has allowed us to react in a timely way to areas of need. In December 2021, our Trustees approved an initial 3 per cent increase in maintenance rate for scholars during the 2022–23 academic year, which was further increased to 5 per cent at the May 2022 board meeting. Subsequently, the Trustees approved an extra one-off support payment of £1,100 to each scholar to alleviate substantial increases in the cost of living in Cambridge.

In terms of finances, the Trust is in relatively good health However, it has also had to manage increased costs in a range of areas, is subject to investment returns from the University's Endowment Fund, and must keep within its agreed spending rule to balance the books. With the current level of expenditure, the Trust has been able to offer 77 new awards for October 2023 entry. Further details are set out in the finance section at the end of this report.

I am pleased to report that the work on the new home for the Gates Cambridge community at 17 Mill Lane is making good progress. An interior design group, including scholar representatives, has provided excellent input, especially on the use of sustainable

Professor Eilis Ferran (Provost), Alison Traub (Executive Director of Cambridge University's Development and Alumni Relations office) and Seattle-based alumni.



Professor Eilis Ferran (Provost), Matt Varilek (Gates Cambridge alumnus and interviewer) and Associate Professor Jennifer Piscopo (Gates Cambridge alumna and interviewer) at the Gates Foundation offices in Seattle.

materials, accessibility considerations and ensuring an inclusive built environment. At this stage we remain hopeful that the project will finish on time and within budget, and that we will move in by early 2024. To make such a statement may be tempting fate as circumstances could change in ways that are entirely outside our control, but at least so far as events that we can influence are concerned, I am sure that nothing with escape the attention of our inestimable Finance Director, Jade Tran, who is leading this project in exemplary fashion.

It has been a busy year for the Gates Cambridge Alumni Association (GCAA), including the Board retreat and alumni weekend in Cambridge, welcome parties for more than 100 incoming scholars hosted by alumni volunteers across the world, and networking activities in Latin America and Africa. I was delighted to have the opportunity to meet alumni and their partners at a brunch during my time in Seattle for the US round interviews. I am immensely grateful to those alumni who have found time in their exceptionally busy lives to serve on the GCAA board, interview prospective scholars, organise or attend alumni events, or otherwise support our endeavours. The valuable work done by the Future of the GCAA Task Force is serving as the basis for a welcome discussion between the Trust and the GCAA about even greater collaboration between the Board and the Trust Office.

Our expertly curated communications channels continue to brim with news of research breakthroughs, prizewinning publications and myriad other achievements of Gates Cambridge scholars and alumni. Thought is also turning to Gates Cambridge@25 and the story we want to tell of the positive impact that the scholarship programme has had over 25 years in confronting some of the world's biggest challenges. Our aim will be to raise awareness of how important the donation has been and how our outstanding scholars and alumni – individually and collectively – are having a transformative effect on the world and its communities. Please do get in touch with me or any member of the Trust staff if you would like to contribute to the development of this story.

A news item that brought particular pleasure was our report of the election of Professor Barry Everitt, my immediate predecessor as Provost, as a lifetime Fellow of the American Association for the Advancement of Science. I would like to take this opportunity to congratulate Barry on behalf of all members of the Gates Cambridge community on this latest honour. I would also like to express my own personal thanks to him, both for leaving the programme in such great shape and for the care he took to ensure a smooth transition between us. Barry is the embodiment of everything that the Gates Cambridge programme stands for: outstanding research, exceptional leadership and a deep lifelong commitment to improving the lives of others.

It is quite simply a joy and a privilege to be the Provost of the Gates Cambridge Trust and to work with a small but exceptional team of staff whose professional expertise and dedication are matched only by their friendliness and kindness. The delicious homemade cakes that appear from time to time in the staff kitchen are an added bonus! My final thanks go to those who were involved in the appointments process for giving me the opportunity to serve this wonderful community.

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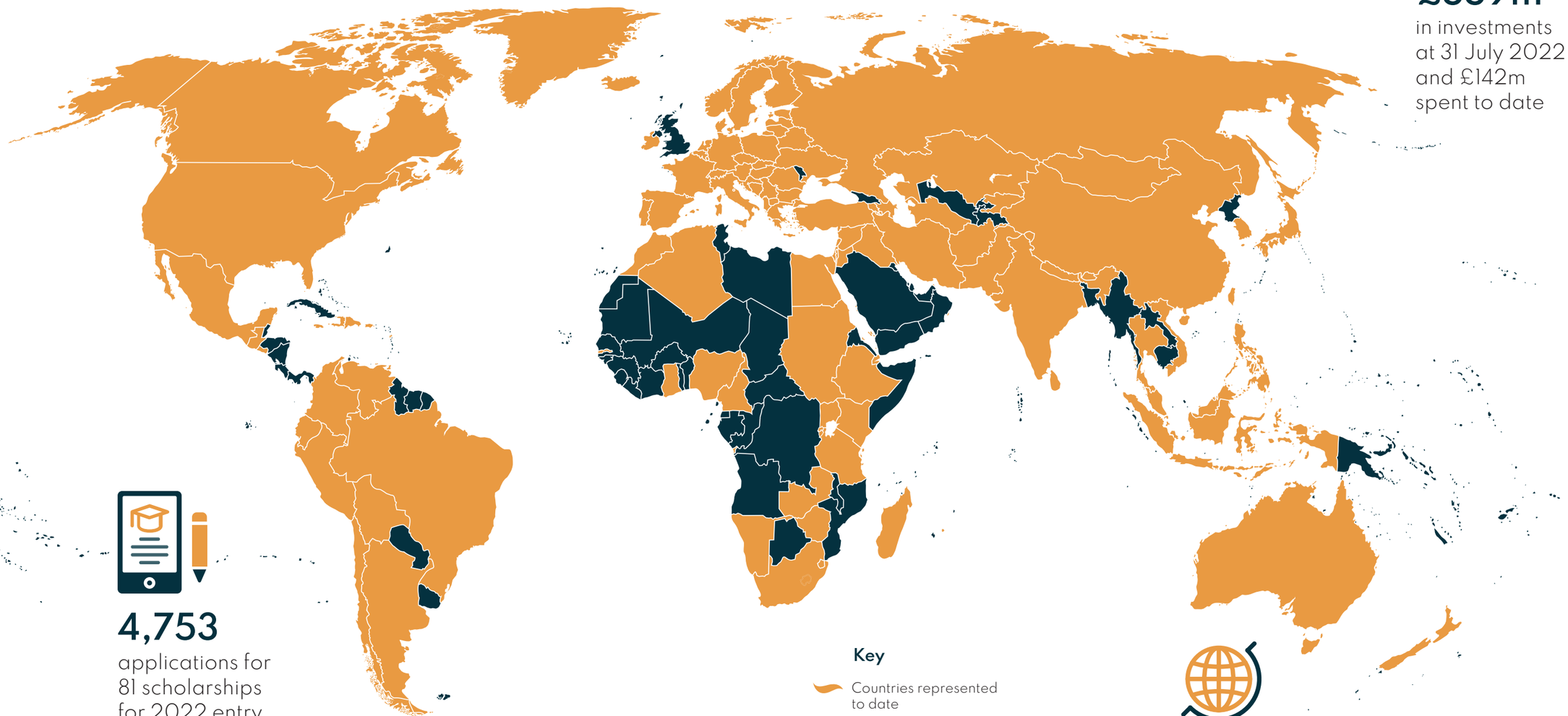
Quick facts

279
Scholars studying in Cambridge

More than
1,600
Alumni spread across the world improving the lives of others

£339m
in investments at 31 July 2022 and £142m spent to date

2,080
scholarships awarded to date



4,753
applications for 81 scholarships for 2022 entry

Scholars from **112** countries and counting

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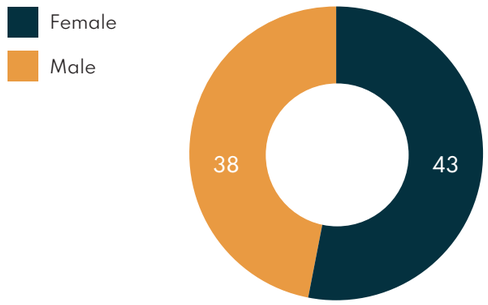
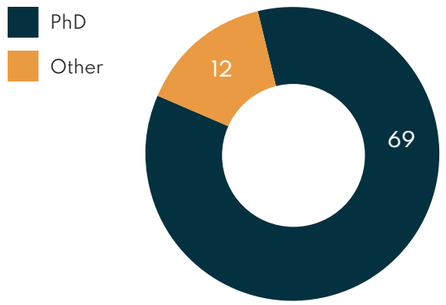
Class of 2022: Summary

For 2022 entry, Gates Cambridge Scholarships were awarded to 81 outstanding candidates from 32 countries. They are pursuing postgraduate degrees at 45 University departments and are members of 26 Cambridge Colleges.

Scholarships awarded by gender



Scholarships awarded by degree type

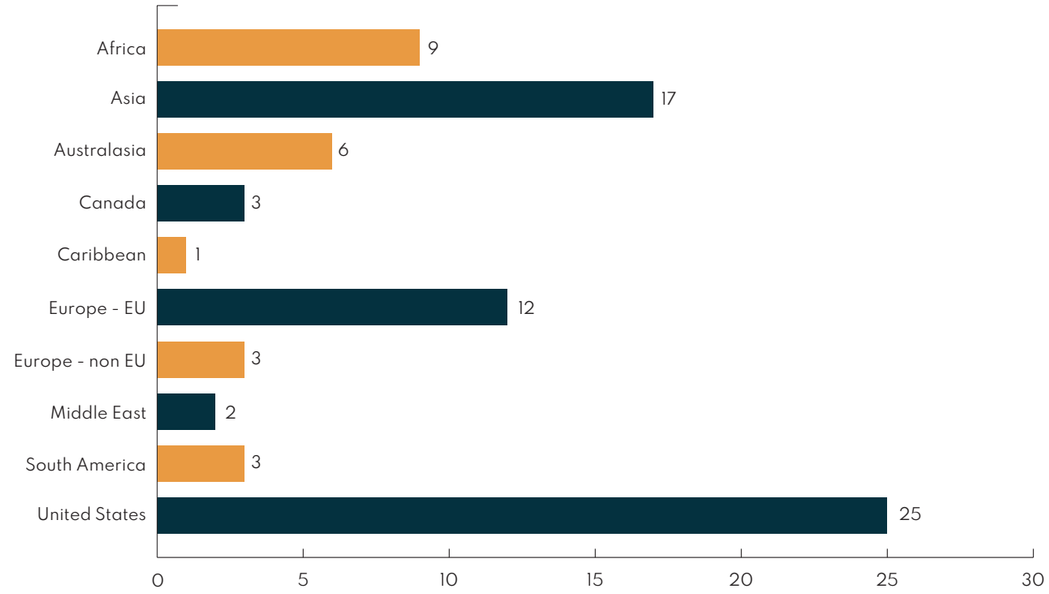


New scholar announcement and bios

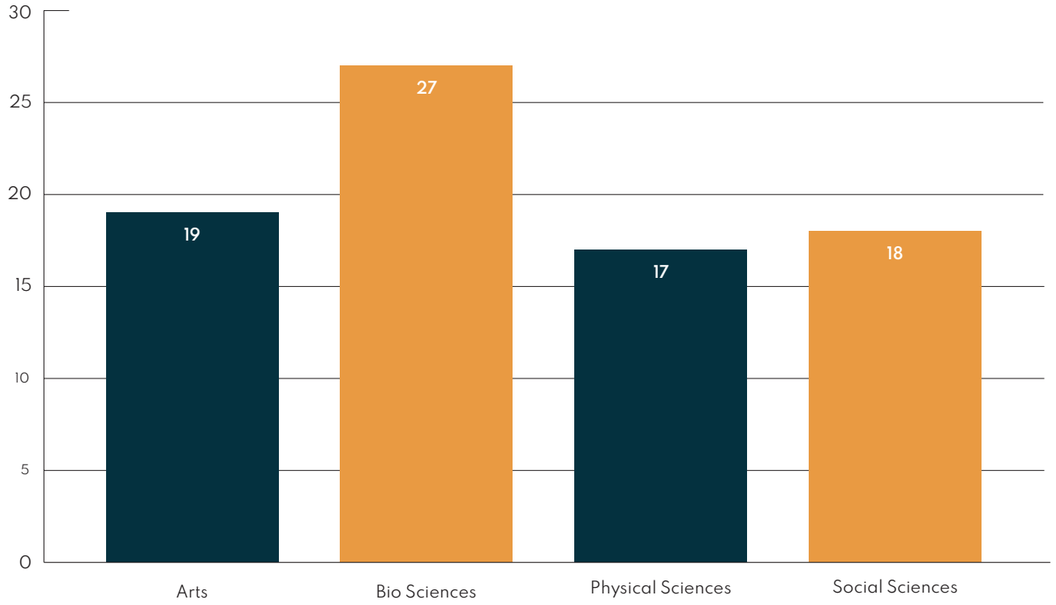
Read our announcement of the class of 2022 here.

Read the bios of the class of 2022 here.

Scholarships awarded by area of the world (primary nationality)



Scholarships awarded by selection panel



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A dictionary of the human genome

Marie Brunet

Marie Brunet's research focuses on the secrets still hidden in our genomes. She says that despite the fact that we live in an era where getting our genome sequenced is possible, we still don't know the origin of two fifths of inherited diseases. That is because, as she says, the genome only currently maps the shallow waters of what we need to know to understand such diseases.

Her laboratory in Canada uses deep learning methods to explore genomic data in order to better understand human diseases, with a focus on paediatric cancers and rare diseases. She says: "The outside world is full of wonders and we have much to explore. I like to travel inside our genomes as much as I like to travel the world: exploring, discovering and understanding."

Marie grew up in a deprived Paris suburb and dreamed of being a vet having spent many holidays with her grandfather, a farmer, and her uncle, who took over his farm. She studied veterinary science for five years at the École nationale vétérinaire d'Alfort [ENVA], but, as the years went by, she began to fall out of love with veterinary practice and in love with the challenge of veterinary medical research.

"The outside world is full of wonders and we have much to explore. I like to travel inside our genomes as much as I like to travel the world: exploring, discovering and understanding."

That love for fundamental research was whetted after Marie attended a summer school course in fundamental science for veterinary students at the University of Cambridge. She loved it. "Every day my brain was challenged. Every day I was dealing with a different question," she says.

Her supervisor was Dr Lesley MacVinish and she took Marie under her wing and agreed to supervise her final year project back in France which continued the research she had been doing in Cambridge. She also encouraged her to apply to Cambridge for her PhD and Marie worked as her research assistant before she started her postgraduate studies.

Marie spent the next four years on her PhD in Pharmacology. She struggled in the first years of her studies into the role of P2X7, a cellular receptor activated by the energy currency of the cell (ATP), in promoting both cellular death and growth, when her attempts to use biochemistry, cellular biology and pharmacology to tackle the subject didn't bear much fruit.

So, when she realised that she didn't have enough data for her PhD, she turned to bioinformatics. She worked night and day to go through the procedures five times or more to verify her results with the help of friends, including fellow Gates Cambridge Scholars. It paid off: while the first three years of her PhD counted for just 20 pages of her thesis, her last year filled 360.

When she finished her PhD, Marie began a post-doctoral fellowship in Biochemistry and Functional Genomics in Xavier Roucou's laboratory at the University of Sherbrooke in Canada. Professor Roucou, like Dr MacVinish, was a vital mentor figure for Marie, encouraging and empowering her to drive her research forwards. His laboratory focused on a set of proteins which are encoded by the genome, which had previously been overlooked by researchers.

Marie did her post-doctoral studies in Professor Roucou's laboratory from 2016 to 2019 before becoming a research associate there from 2019 to 2021. In July 2021 she was appointed assistant professor and she now has her own laboratory with a focus on pseudogenes, nonfunctional segments of DNA that resemble functional genes, and is trying to understand their role in disease, particularly paediatric cancers and developmental disorders.

Marie works in a clinical department linked to a paediatric unit and continues to use bioinformatics daily so she can conduct large scale studies. Her team and that of Professor Roucou jointly created and lead OpenProt, the first proteogenomic resource supporting a polycistronic annotation model for eukaryotic genomes – which Marie describes as a free dictionary of the genome which draws on Artificial Intelligence to understand where the important information on the genome can be found and whether anything has been missed.

More recently, she and other leaders in the field of genome annotation have come together to publish a paper in Nature Biotechnology in which they review the state of their field of study and where it should look to make progress.

She states: "In 2016 this field was so new. Few people were asking questions about all the proteins that were missing from our mapping of the genome. People said it was impossible that they were missing important information. Now the message is getting out and more researchers are including this possibility in their research design. In the next 10 years, this will filter through to clinical practice and it is inevitable that it will change the way we do medicine."

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Detective of ancient climate change

Stijn de Schepper

Stijn De Schepper's job is to investigate past climate change through working his way down the ocean bed, starting with today's sediment and moving back through thousands of years of Earth's history.

He maps ancient marine sediments to find out if, why and how the environment changed in the past. While the world rightly focuses on climate change mitigation and adaptation, Stijn – Gates Cambridge's first paleo-climatologist – is very clear that there is still a lot more to learn about the fundamentals of our oceans and climate history. The impact his research will have is difficult to fathom, but it is an essential part of the jigsaw if we are to understand the bigger picture of our climate history.

Stijn, who is from Belgium, did his undergraduate degree in Geology at the University of Ghent. For his final-year thesis he managed to get accepted onto a project in the Belgian countryside, where he used fossils to try to understand what the ocean looked like 400 million-years ago. He loved it and decided he wanted to delve more in depth into how he could use fossils to understand climate change so he did another year at the University of Liège to qualify for an Interuniversity master's in Plant Micropalaeontology and Palynology.

While the world rightly focuses on climate change mitigation and adaptation, Stijn – Gates Cambridge's first paleo-climatologist – is very clear that there is still a lot more to learn about the fundamentals of our oceans and climate history.

After his master's Stijn applied for PhD positions and worked as a geologist at a dredging company, but soon realised it was not what he wanted.

As a student in the Quaternary Palaeoenvironments Group at the University of Cambridge, Stijn began his PhD in 2002 by continuing his work on Pliocene phytoplankton fossils, comparing those in Belgium with sediments from the same era found at sites in the UK and the North Atlantic. He studied sediments from the Pliocene era, a time period from around five to two million years ago – the last time Earth's climate was 2–3°C warmer than today and also the time that the world and its fauna and flora as we know it today was shaped.

As he studied, he started to see that his work could be used to understand changes in the ocean and in climate. His studies involved a fascinating piece of detective work: by mapping the fossil material over a time interval of three million years he saw organisms appear and disappear. By comparing the fossils with the organisms that still live in the world's oceans today, he could infer what the climate was and how it changed. For instance, at some point in the past palm trees grew in the Arctic, showing that it must have been considerably warmer then.

After Cambridge Stijn took up a postdoctoral position at the University of Bremen in Germany where he focused more on a geological interval of cooler global average temperature lasting thousands of years that occurred within the warm Pliocene. It was there that he says he became a paleoclimatologist, having started that transformation at Cambridge.

Stijn's work over the last decade or so aims to provide the tools needed to map the history of sea ice in the distant past in more detail and greater breadth. After his time at Bremen he moved to the University of Bergen for more postdoctoral work, this time in partnership with industry on a CO2 storage project. The company he was working with was looking for good locations to store CO2 in sediment under the sea, but they found that what was injected in the sediments kept coming back up to the sea floor. Stijn's work showed that they had misinterpreted the geology of the area and the sediments they were injecting CO2 into.

In 2014, Stijn moved to the Norwegian Research Centre where he is now research professor. He got funding from the Norwegian Research Council to work on sea ice in the Pliocene era. He started to realise that the tools we have for understanding sea ice in the geological record could be better and became enthusiastic about the idea of using ancient DNA stored in sediment for finding out the evolution of sea ice in the past.

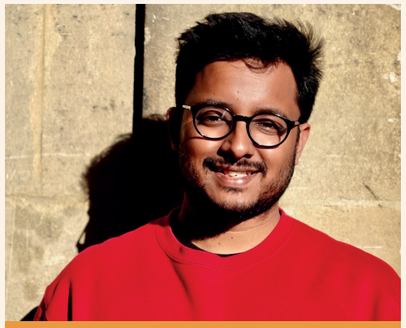
Starting out small to test his ancient DNA theory, he got funding from the European Research Council in 2019 to scale his work up and is now Principal Investigator of the AGENSI project. The innovative project uses the genetic signature from surface water and sea ice organisms that are stored in sediments.

Stijn says: "Using ancient DNA we can look at organisms which don't leave behind fossil shells or skeletons. That opens up an entirely new fossil record in our oceans. We are just at the start and it is very exciting. We can't see the full potential yet."

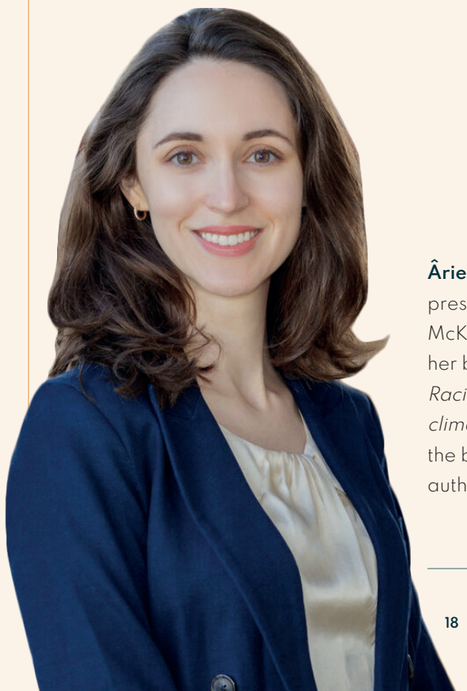
"Using ancient DNA we can look at organisms which don't leave behind fossil shells or skeletons. That opens up an entirely new fossil record in our oceans. We are just at the start and it is very exciting. We can't see the full potential yet."

Melisa Basol was shortlisted for an award for women in science for her research into countering Covid misinformation. Melisa was shortlisted for the science category of the UK Awards which recognises "truly remarkable female scientists, forging new ground in research and scientific achievement". Earlier in the year Melisa was also named on the Forbes 30 under 30 list. Read more.

> "Ramit is evaluating whether public engagement on Twitter about climate action, over time, impacted social and environmental justice.

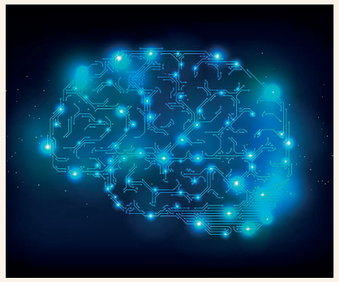


Ramit Debnath won an inaugural Cambridge Zero Fellowship to further his research into misinformation about climate change. He is evaluating whether public engagement on Twitter about climate action, over time, impacted social and environmental justice. Read more. Ramit is also co-author of a paper on how to ensure energy policy research serves local needs. Read more.



Âriel de Fauconberg won the prestigious Financial Times and McKinsey's Bracken Bower Award for her book proposal, *Before the Dawn: Racing to net zero on the front lines of climate innovation*. The award is for the best business book proposal by an author aged under 35. Read more.

Charles Emogor won the Vice-Chancellor's award for research impact and public engagement. He was recognized for his work with communities and law enforcement agents in Nigeria to curb pangolin poaching and trafficking. Read more.



Ayan Mandal published a new book on proactive strategies to prevent brain diseases. A Stethoscope for the Brain: Preventive Approaches to Protect the Mind (New Degree Press, 2022) is based in large part on Mandal's PhD research at the University of Cambridge. Read more.

Andrea Binder was selected as one of 10 new members of Germany's prestigious Junge Akademie, which provides interdisciplinary and socially relevant spaces for outstanding young academics from German-speaking countries. Read more.

In August, **Kayla Barron** spoke to Gates Cambridge Scholars about spending six months on the international space station as a NASA astronaut. Kayla met members of the Gates Cambridge community in the Scholars' Room and virtually. Read more.

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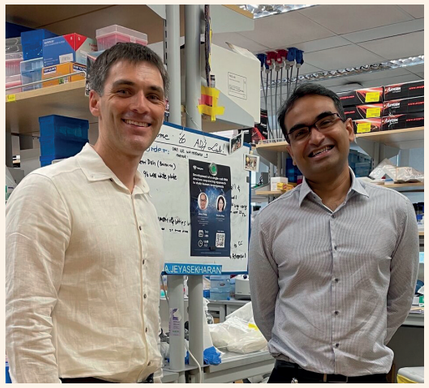

Anand Jeyasekharan and **Chandler Robinson** will collaborate on a new drug candidate that could tackle a variety of cancers. The drug candidate has the potential to replace Doxorubicin. The molecule, known as MNPR-202, is a novel advance on Doxoubicin, which is used in over a million cancer patients each year. Read more.

Leor Zmigrod spoke at Hay Festival in June 2022 about her award winning research in the emerging field of political neuroscience. Leor is interested in delving deeper into how the brain constructs reality and how this relates to our political views. Read more.

> “I’m interested in the ways ideologies are imprinted on our brains and whether we can erase or undo ideologies’ dangerous influences in ways that are healthy.”

Yama Dixit was selected as one of the 75 leading women in Science, Technology, Engineering, Arts and Mathematics in India. She will feature in a book – *She Is* (Red Dot Foundation) about leading Indian women in STEAM disciplines. Read more.

Jonathan Corpus Ong won a prestigious Andrew Carnegie Fellowship. Jonathan, Associate Professor of Global Digital Media at the University of Massachusetts Amherst, is one of 28 exceptional scholars, journalists and authors who will receive $200,000 stipends. Read more.

The **Gates Cambridge Alumni Association**, with support from the Trust, hosted the Alumni Weekend in July 2022. The event included panel sessions on topics such as the War in Ukraine, professional networking opportunities and a talks by the then Provost Professor Barry Everitt and a keynote by Professor Bhaskar Vira.

Three remarkable Gates Cambridge Scholars won this year’s Bill Gates Sr. Prize for outstanding research and leadership. **Kim van Daalen**, **Reetika Subramanian** and **Cynthia Okoye** were selected for the prize which was established in recognition of the late Bill Gates Sr.’s role in establishing the Gates Cambridge Scholarships, being a Trustee and engaging with, and inspiring, many generations of Gates Cambridge Scholars. Read more.

Pradipta Biswas has been elected Vice Chairman of the ITU Study Group 9. The ITU is the specialised agency for telecommunication at the United Nations. Read more. In addition, Pradipta led a first of its kind toy hackathon to help children with severe disabilities to communicate through eye-controlled interfaces. Read more.

An interdisciplinary approach to Law

Alaa Hajyahia

When she started studying law, Alaa Hajyahia [2022] saw it as a potential instrument for justice, but as she continued the schism between what it says and the political and social context in which it operates brought more questions than answers. Being one of just a handful of Palestinian students at Tel Aviv University's (TAU) Faculty of Law and Department of Anthropology and Sociology, her time there was marked by many lonely 'firsts' and 'onlys'. This marked absence has solidified her desire to be a scholar of both law and social sciences.

Alaa was born in Tayibe, an Arab-Palestinian city which is 80 kilometres from Ramallah in the West Bank and 50 kilometres from Tel Aviv. Alaa, whose family is Muslim, went to local Arab-Palestinian schools where the focus was on educating people for guaranteed jobs because of the political and economic situation. Alaa chose to study law at Tel Aviv University, but she soon began to question the context surrounding her studies. She says: "It is not an easy task to be a Palestinian law student in Israel. This means to study the language and systems that were being used to oppress Palestinians. Once you acknowledge that, it creates dissonances, tensions and paradoxes".

She adds that another issue was the lack of representation of both law students and professors or lecturers at TAU Law from the Arab-Palestinian community.

In grappling with this absence, Alaa led an effective faculty-wide academic and social support system that took active measures to increase the ranks of Arab-Palestinian law students at TAU, to improve their academic and professional performance and to maximise their potential for launching a successful legal career. But the experience also made her realise that, for such moves to be sustainable, they had to be supplemented by research that explains and theorises the positionality – sociopolitical, economic, and legal – not only of Arab-Palestinians in Israeli society but other marginalised groups as well.

Her PhD in Social Anthropology is an ethnographic study of the relationship between the Israeli state, its legal institutions and the Palestinian community at its margins. She says: "Anthropology has consistently helped me bring to light aspects of law that are otherwise hidden, showing that where disciplines meet, legal research can better understand and bring about social change. It is this passion for interdisciplinary research that has guided my academic journey."

She adds: "Being Palestinian in Israel, questions of identity are never simple to answer. Normally, I am expected to describe, and think of myself as "Arab-Israeli" rather than "Palestinian". If I choose to disregard this label, I invite scrutiny almost immediately. How I see myself, and, as importantly, how Israeli society sees me, are deeply interconnected and rife with tensions and contradictions."

> "It is not an easy task to be a Palestinian law student in Israel. This means to study the language and systems that were being used to oppress Palestinians."

After finishing law school, Alaa did an internship and then studied for the Bar exam. However, with many questions that her law course had been unable to answer, she decided to do a master's in law alongside a BA in sociology and anthropology, followed by a master's in anthropology. She started using social science theories and found they helped her "to bring to life aspects of the law that remained hidden".

Her TAU Law Master dissertation focused on what she viewed as the inherent conflict between the support of Israeli Jewish liberals for the Law of Return of 1950, which allows all Jews the right to relocate to Israel and have Israeli citizenship, and their opposition to the Nation State Law, which defines Israel as the nation state of the Jewish People and which many see as enshrining Jewish Supremacy over Palestinian citizens of Israel. Alaa wanted to understand how what she saw as a contradiction was justified.

Alaa then moved to Yale Law School, having previously been there on a graduate student exchange programme. At Yale, Alaa wrote several papers. One of them won the Yale Law Women Critical Race Theory Annual Award. She also worked on a research study which seeks to isolate underlying assumptions that shape the European Court of Human Rights' narratives, understandings and assumptions – as well as that of legal scholars generally – regarding Muslim women who wear the Islamic veil which, she says, shape the Court's decisions. Her study seeks to challenge these and to suggest alternative ones, which foreground Muslim women as morally evaluative humans distinctly and deeply informed by their unique cultural experiences.

For her PhD she is focusing closer to home on the way tensions between the state of Israel and the Palestinian community affect people's everyday choices. "It's a complex relationship and I want to uncover the diverse narratives of citizenship and belonging," she says. "I want to understand how the relationship between the state of Israel and its legal institutions and the Palestinian community affects how the latter think about the choices they make in their daily lives."

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Addressing food insecurity through plant science

Anoop Tripathi

Anoop Tripathi is one of the few people in the world who have experience of using a newly developed technique of cereal grafting and hybridisation which could help save some crops threatened by climate change and disease.

Before his PhD, he had worked as Senior Research Laboratory Technician at the University of Cambridge on a new grafting technique which overturns the long-standing consensus that monocot plants such as grass and grass-like flowering plants cannot graft. He was named on a paper, led by Gates Cambridge Scholar Greg Reeves, on how the process could be applied to bananas to address banana shortages.

Reeves has since left and Anoop is now the only person in Cambridge who has the knowledge to take that research forward. His PhD focuses on how to improve the photosynthetic properties of rice plants, making them able to grow with less water.

Anoop's desire to help others, particularly farmers, was honed at an early age. Born in Ayodhya in India in 1987, he would spend the summer as a child with his grandparents where his grandfather would teach him about hands-on practices in agriculture. He developed a deep respect for farmers.

At first Anoop intended to study medicine, but he couldn't get into the college he wanted so opted instead for a BSc in Botany and Chemistry at the University of Lucknow.

Anoop's desire to help others, particularly farmers, was honed at an early age. Born in Ayodhya in India in 1987, he would spend the summer as a child with his grandparents where his grandfather would teach him about hands-on practices in agriculture.

One of his first classes in Botany involved making a section in a dicot plant. His professor showed the other students what he had managed to do. The experience was a turning point for Anoop and cemented his idea that he could be a botanist. He spent his undergraduate years learning how to recognise the different plants in the university grounds and over the summer he would go back home and talk to local farmers about what he had learnt. "Most of the farmers were illiterate so were unable to follow written instructions," he says. "No-one was trying to inform them in ways they could understand. Everything I was learning I used to educate them."

Anoop finished his degree in 2008 and was set on becoming a civil servant. He decided, however, that he needed to do a master's in Biochemistry in order to have a better understanding of plants and the relationship between plants and animals. He then spent the next five years trying to get into the civil service, determined not to give up. By 2015, Anoop's father was preparing to retire and Anoop felt he needed to move his life on.

He had taken exams along the way to keep his scientific skills up to date and in 2015 became a senior research fellow at the National Bureau of Plant Genetic Resources in New Delhi where he worked on a project focused on understanding the evolution of photosynthesis. It involved comparing C3 plants – different rice varieties – with C4 plants like millet in a bid to make more efficient rice plants. The project connected Anoop with what researchers outside India were doing, including a project at the University of Cambridge which was funded by the Bill & Melinda Gates Foundation. Through this he came across the work Gates Cambridge Scholar Greg Reeves was doing on monocot grafting.

Around this time Anoop suffered a series of family bereavements. His grandparents died and a nephew who he was very close to drowned in a river aged 12. His girlfriend was doing postdoctoral research in the Department of Plant Sciences at Cambridge, and he decided to move there.

Eventually, Anoop got a job working with Greg Reeves on monocots. He started work as a lab technician in January 2020. He had never thought about doing a PhD before, but, after he was credited as second lead author on Reeves' banana paper and because of the insightful and motivational nature of the research he was doing, the idea started to take seed.

Anoop says that when he applied to do a PhD, he decided he wanted to help rice farmers in India, the second largest grower of rice in the world. Anoop knows first-hand how rice fields work and about all the irrigation problems as well as the impact of climate change. He was keen to design a project that could introduce some of the qualities of other crops into rice and believes that, by using somatic hybridisation, the photosynthetic efficiency of millet plants can be transferred to rice which will mean rice can grow with less water. Anoop is keen to ensure that such grafting will benefit farmers in places like India and says that requires understanding the challenges they face with post-harvest processes.

Eventually Anoop wants to return to India to work with farmers, teach them how they can get better results and ensure his research has maximum impact in the real world.

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Financial Summary 2021/22

Jade Tran, Director of Finance

The Trust was founded with an endowment of $210mn from the Bill and Melinda Gates Foundation in 2000. Since that time, the Trust has awarded 2,080 scholarships to 1,970 scholars from 112 counties, with the net value of the Trust as at 31 July 2022 standing at ~£339m.

Maintenance and fees are the Trust's biggest expenses. An increase of £0.9m in student liability was accrued for scholar maintenance.

Support and Governance costs have remained the same as the previous year, in absolute terms approximately 5.4% (2021: 5.4%) of total reported expenditure. All the staff were working partially remotely and the Trust offices opened daily during the year.

The Trust funds a variety of activities to support the Scholar community, including the provision of a Scholars' Room, and funding for the activities organised by the Scholars' Council. The building was opened partly during the 2021/22 academic year, some Scholar activities returned in-person and others were held virtually. The Trust greatly values the work of the Gates Cambridge Alumni Association in promoting the Trust and facilitating an effective network of Scholars past and present and supports their activities financially.

At the December 2021 Board meeting, our Trustees agreed to increase maintenance for 2022-23 by 3% compare to 2021-22. However, in May 2022 meeting the Trustees agreed to a revised maintenance increase from 3% to 5% due to high inflation rate. In September 2022, the Trustees communicated and approved an extra one-off support of £1,100 to each scholar to alleviate the high cost of living.

The Trust is entirely reliant on the income from and long-term growth of its investments, and continues to use the Cambridge University Endowment Fund (CUEF) as its primary investment vehicle. The CUEF declares a quarterly dividend at the start of each year and these distributions result in predictable cash flows for the Trust. In the year to 31 July 2022, investment income totalled £11.3mn, and the market value of the Trust's investments increased by £6.1mn (1.8%), with the CUEF performing reasonably against benchmarks.

In order to maintain expenditure within agreed limits, whilst preserving the real value of the Trust's assets, the Trustees have decided to admit 77 new scholars in 2023/24.

SUMMARY OF FINANCIAL STATEMENTS

Year ended 31 July 2022

Summary Statement of Financial Activity

	2022 £'000	2021 £'000
Income		
Income from Investments	11,339	10,727
Expenditure		
Charitable activities	11,622	9,594
Total expenditure	**11,622**	**9,594**
Net (expenditure)/income before gains and losses on investments	**(283)**	**1,133**
Net gains/(loss) on investments	6,147	55,508
Net income and net movement in funds	**5,864**	**56,641**
Reconciliation of funds		
Total fund brought forward	332,752	276,111
Total funds carried forward	**338,616**	**332,752**

Summary Balance Sheet

	2022 £'000	2021 £'000
Fixed assets (Including fixed asset investments)	**341,001**	**332,935**
Current assets	**9,932**	**11,132**
Liabilities (creditors falling due within one year)	**(6,548)**	**(6,361)**
Net current assets	**3,384**	**4,771**
Total assets less current liabilities	**344,385**	**337,706**
Creditors falling due after more than one year	**(5,769)**	**(4,954)**
Net assets	**338,616**	**332,752**
The funds of the Trust (unrestricted income funds)	**338,616**	**332,752**

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