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# THE SCHOLAR

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UNIVERSITY OF  
CAMBRIDGE

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*The Scholar*, 2014

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*The Scholar* is the publication of the Gates Cambridge Community. Articles that offer a window into the lives and work of Gates Cambridge Scholars or articles that tackle large interpretive questions relevant to the Gates Cambridge mission are particularly encouraged. Highly focused contributions are welcome, but preference will be given to submissions that are of interest to a diverse cross-section of readership in more than one discipline of study. Contributions are subject to editorial approval. Ideas expressed are those of the authors alone.

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# EDITORS' NOTE

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Gates Cambridge Scholars are united in their dedication to scholarship, leadership and service to make an impact on communities local and global. These shared commitments of the Gates Cambridge Community resonate throughout the articles featured in the 2014 issue of *The Scholar*, and continue to strengthen with the visions of the new Gates Cambridge Provost Barry Everitt (Brianne Kent, p.4).

Scholarship in the Gates Cambridge Community includes scientific investigations into the rise of antibiotic resistance (Devinn Lambert, p. 10) and political perspectives on the 2013 US government shutdown (Victor Roy, p. 19), elitism in Nigeria (Wale Adebaniwi, p. 20) and civil unrest in Ukraine (Svitlana Kobzar, p. 21). Oftentimes, scholarship bridges across disciplinary boundaries, as seen explorations into the history of the female mouth (Kathryn Crowcroft, p. 15), Isaac Newton's theological passions (Sarah Dry, p. 16) and opera performed entirely online (Ilana Walder-Biesanz, p. 17).

As shown, Gates Cambridge Scholars lead through scholarship. But leadership is not limited to the academic domain; Scholars also lead through other forms such as social innovation. For example, Scholar-led enterprises improve identification in developing countries (Grecia Gonzalez, p. 5), expand access to university education (Greg Nance, p. 6) and build education infrastructure in Africa (Andrea Pizziconi, p. 7). In these stories, Gates Cambridge Scholars from various different countries and class years act as a team to tackle issues that affect all parts of the world.

A theme that emerges from this issue is "Medicine in Society", a topic that reflects the joint roles of science

**A theme that emerges from this issue is "Medicine in Society", a topic that reflects the joint roles of science and policy in furthering holistic approaches to health, disease and death.**

and policy in furthering holistic approaches to health, disease and death. Challenges faced by present-day medicine include the treatment of cardiovascular disease (Jerry Lee, p. 11), accurate tracking of child mortality rates (Mikkel Oestergaard, p. 12), US healthcare reform (Lucinda Lai, p. 13), arts and humanities in medicine (Erica Cao, p. 14) and ethics of physician-assisted suicide (Christina Schweitzer, p. 18).

Finally, a dedication to improving the lives of others is a thread which runs through and ties together the Gates Cambridge Community. This commitment to service is demonstrated in, for example, the application of construction to improve job infrastructure in developing countries (Musa Chungu, p. 8) and the use of reusable systems to reduce health and environmental hazards (Luca Di Mario, p. 9). This issue of *The Scholar* reflects a community of scholar-leaders devoted to addressing concerns of humankind – from creating enterprising technologies and engaging in political thought to undertaking innovative research and improving health and treatment.



**Editor-in-Chief**  
Erica Cao '13



**Alumni Editor**  
Rose Spear '06

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# MEET THE PROVOST

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## Interview with Gates Cambridge Provost Barry Everitt

Brianne Kent (Canada, 2011) – PhD Experimental Psychology

This year, the Gates Cambridge community welcomed a new Provost, Professor Barry Everitt, a leading behavioural neuroscientist in the areas of motivation, learning, memory and addiction. Some of his research examines how the act of remembering can make a memory susceptible to changes, and has contributed to the recent “radical reinterpretation” of memory in the field. One of the 100 most cited neuroscientists, Professor Everitt is a Fellow of both the Royal Society and the Academy of Medical Sciences, and was recently awarded the prestigious Fondation Ipsen Neuronal Plasticity Prize for 2014. Along with his passion for scientific enquiry, Professor Everitt was Master of Downing College and has a strong interest in teaching and education, which has led him to become involved with Gates Cambridge.

...it is clear that even though he has only officially been in this position for a few months, he already has a few goals for his time as Provost.

I had the opportunity to sit down with the Provost upon his return from the Gates Foundation in Seattle. He spent the week interviewing the next round of US Scholars and hosting the first ever meeting with the Board of Directors for the Gates Cambridge Alumni Association (GCAA). From our conversation, it is clear that the Provost is full of enthusiasm to help refine and evolve Gates Cambridge.

Professor Everitt was head of graduate admissions for the Department of Psychology when Gates Cambridge was founded. As Provost, Professor Everitt is committed to making sure that Gates Cambridge provides Scholarships that fully fund the most outstanding



overseas graduate students, and that the Scholars have the support and opportunities necessary to make the biggest difference in the world.

Professor Everitt is taking this year to settle into his role and learn as much as he can about Gates Cambridge and what Scholars need. From our conversation it is clear that even though he has only officially been in this position for a few months, he already has a few goals for his time as Provost.

Firstly, he is committed to spending time interacting with Scholars to learn how the Trust can better support them. He is particularly excited about the progress being made by the Council to develop professional skills training. He said, “many current Scholars are concerned about how to map their career trajectory and gain the skills that will enable them to improve the lives of others in the future. The workshops and experiential learning methodologies are a way to equip students with the skills and decision-making ability needed to use their careers to make a difference”.

His second goal is to support the growth and activities of the GCAA. He said, “there is a clear intention of creating a global network of future leaders, but this network needs to evolve. We

need to find a way to maintain the sense of community and connectedness that develops while Scholars are in Cambridge”.

Professor Everitt's third goal is to raise the profile of the Scholarship, in order to recruit the most outstanding students from around the world. He has a particular focus on countries that are currently underrepresented. He explained, “We want the most outstanding overseas graduate students to come here and experience graduate studies in one of the greatest universities in the world. We need to make sure the students with the potential to study here know enough about Gates Cambridge Scholarships to apply”.

It is obvious from our conversation that Professor Everitt feels an obligation to make sure the Gates Cambridge Scholarship program reaches its full potential for making a positive impact in the world. As a Scholar, I am excited to see how Professor Everitt helps Gates Cambridge grow.

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Biography: Brianne Kent is currently a third year PhD scholar in the Department of Psychology studying the neurobiology of learning and memory, as well as Alzheimer's disease.

# IDENTIFICATION AT YOUR FINGERTIPS

## High-impact social enterprise

Grecia Gonzalez (USA, 2012) – PhD Biochemistry

What do you get when a programmer, a doctor, an engineer, a global health researcher, a business student and a couple of scientists form a team? The Gates Cambridge Common Room produced SimPrints, a social enterprise dedicated to tackling a major problem in the developing world: identification.

In resource-poor settings, identification can pose a significant obstacle. Accurate patient identification is an essential step in providing medical care. But this simple step can be a severe challenge in resource-poor settings: patient records often do not exist, and when they do, they tend to be paper-based and susceptible to loss or damage; few people have official identity documents, while using name or date of birth is inadequate in contexts where multiple people share the same name in a village, or do not know their exact birth dates. Migration and changing political boundaries further complicate matters.

Existing health systems and technologies have only achieved approximately 80% coverage worldwide, and the consequences of that unsatisfactory statistic are grave. A recent study estimated that a scale-up of five immunisations in 72 of the world's poorest countries could save 6.4 million children every year. The technology we are developing at SimPrints has the potential to contribute towards solving this global health challenge, as well as many others.

The idea for SimPrints started about two years ago at the Cambridge Humanitarian Centre Hack Day. Different NGOs presented different tech challenges they were facing, and the team led by Toby Norman (USA, 2011) chose the challenge posed by

Medic Mobile, a US-based non-profit working to increase access to mobile health (mHealth) technologies, with the goal of raising the effectiveness of health care providers in resource-poor settings. Medic Mobile had hit a wall when it came to addressing patient identification and the cascade of problems it created. The idea of using fingerprints as a unique ID was born from this challenge, and after winning the competition, the team, joined by Alexandra Grigore (Romania, 2012), Daniel Storisteanu (Canada, 2012), Victor Roy (USA, 2013), Liz Dzeng (USA, 2007) and myself, decided to try to transform the idea into reality.

**The Gates Cambridge Common Room produced SimPrints, a social enterprise dedicated to tackling a major problem in the developing world: identification.**

Today, SimPrints is growing fast and working hard to build a solution. Our aim is to identify patients more accurately, cheaply and quickly than any of the existing systems by coupling fingerprint biometrics to mobile phones. We have already developed a prototype for a rugged, hand-held scanner that can wirelessly sync with a mobile phone to identify patients and link with a cloud database. When complete, a community health worker will be able to scan a patient's fingerprint, send that information to a central server via text or SMS packet, and then receive a text back

that informs them about the patient's medical history. Our tool draws on the strength of central cloud servers, but frees them from static computers or a fixed internet connection. As such it is better suited to be used by health workers travelling large distances or working in areas without regular internet access or electrical power. Furthermore, the system can be used in a stand-alone fashion or integrated into other mHealth technologies.

And healthcare is not the only area in which rapid mobile identification could have a lasting impact. Mobile biometrics can also address the problem of tracking refugees and internally displaced persons – a significant challenge since many refugees lack formal identification or have crossed several national borders. In these settings, biometrics offers a powerful tool for aid workers to link refugees to a single unique identification that can connect GPS location, medical data and aid records. Microfinance, the lending of money and access to financial resources in developing regions, is another domain limited by inadequate identification and credit-tracking options. Adding the security of a fingerprint scan can enable local businesses and governments to combat corruption and streamline services.

The team at SimPrints is excited to be taking our idea forward. This year sees us field testing in Bangladesh. Next year we hope to go even further.

**Biography:** Grecia Gonzalez is a PhD candidate in the Department of Biochemistry at the University of Cambridge. To learn more about SimPrints, visit [simprints.com](http://simprints.com), or get in touch at [info@simprints.com](mailto:info@simprints.com)



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# GATEWAY TO UNIVERSITY ACCESS

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## A Gates Cambridge-inspired education technology enterprise Greg Nance (USA, 2011) – MPhil Management

As Gates Cambridge Scholars, we realised during gatherings and conversations that our experiences in earning a place at Cambridge University gave us insights we could share to help other students achieve their potential. Drawing on inspiration from this academic community, ChaseFuture was launched to expand university access to aspiring students everywhere. ChaseFuture offers a hub for students navigating the application process, transitioning to university life and preparing for professional success. As a social enterprise, it also aims to expand access to education through reliable information, useful resources and a network of committed mentors.

ChaseFuture's innovative model pairs applicants with admissions experts from their target university and academic field for one-to-one mentorship. To date, our 140 admissions experts have advised over 1,000 paid clients. ChaseFuture's free how-to articles and video tutorials inform and inspire applicants to explore their interests and build extracurricular,

volunteer and professional experiences before applying. In just 20 months since our founding in September 2012, over five million students have utilised these free resources, making ChaseFuture the world's fastest growing admissions consulting platform. We recently secured US\$400,000 in venture capital to finance our expansion.

People are prioritised over profits in order to sustainably grow the organisation and its impact. Drawing on the example of the Bill & Melinda Gates Foundation, we aim to think long-term and to continually invest in our people. Our dedication to reliable information, helpful tools and compassionate mentorship has produced best-in-class admissions results for our clients, including 29 acceptances to Columbia, 20 to Imperial College London, 16 to the London School of Economics and 8 to Cambridge, among other notable successes.

ChaseFuture seeks to incorporate a founding principle of the Gates

Cambridge Scholarships of harnessing a global network to address the world's daunting challenges. We employ an "all-hands-on-deck" approach to address the unmet needs of the multitudes of students who crave the opportunity to attend university and unlock their potential in life, but who lack the simple know-how to do so on their own. This circumstance presents both an enormous challenge for ChaseFuture and an opportunity to empower these students to gain access to the information, tools and mentors they need to apply to university and transition to life abroad.

As our organisation grows, we will relentlessly pursue our global vision with integrity.

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Biography: Greg Nance is the Co-Founder and CEO of ChaseFuture. A member of Fitzwilliam College, Greg is a 2011 Gates Cambridge Scholar and a Harry S Truman Scholar from the University of Chicago. He was named one of the "Top 99 Foreign Policy Leaders Under 33" by the Diplomatic Courier.

# AFRICA'S HIGHER EDUCATION DILEMMA

## Investing in universities for Africa's future

Andrea Pizziconi (USA, 2003) – MPhil Land Economy

Access to higher education is one of the most important factors affecting long-term economic growth in developing countries. This is a particular challenge for Africa, which needs capacity for 5.6 million more students than its current facilities can accommodate. The cost of constructing the additional physical infrastructure needed to bring Africa's tertiary education enrolment rates to just half of the global average of 27% is a minimum of over US\$ 46 billion, yet current international aid and local government funding has been less than US\$ 1 billion a year.

Africa Integras was created to bridge this funding gap. Our company brings private capital to develop and finance all facilities required by a university including residential and academic, leases these newly constructed facilities to the university on an affordable long-term contract and then transfers all assets back to the university at the end of the project. We also construct on-campus commercial facilities to enhance overall returns to investors and foster economic development. When we transfer the commercial assets back to universities, we give them revenue-producing assets that will support the university's operations in the long-term, just as the world's most successful universities originally built their endowments.

Even though developing real estate in Africa seems challenging in itself, the greatest challenge we have faced is in fact one of perception: universities and governments often seek financing through traditional public procurement processes or private grants and lack familiarity with the provisions required to attract private capital, while private investors are hesitant to enter new sectors without a successful track record of working with private investors. However, this

perception challenge can be overcome: we negotiate transparently with our university partners to demonstrate how reduced financing costs and attractive commercial returns can be achieved by using similar models as those that have brought private capital to energy infrastructure projects in Africa. In fact, we have yet to encounter a project where the university and investor interests could not be balanced to achieve these mutual benefits, while dramatically enhancing the quality and capacity of each learning environment.

Our current pipeline of projects, with over US\$ 300 million of identified university infrastructure opportunities,

will construct facilities to accommodate over 100,000 additional university students each year. While completion of these projects will address only a small fraction of the total market, we are confident larger institutional investors will follow, bringing profound social and economic impact for entire countries. It is an urgent and exciting moment for Africa's future.

Biography: Andrea Pizziconi is the founder of the Christie Company, a sustainable mixed-use development company, which is the managing partner of Africa Integras, an investment company focused on education infrastructure projects in Africa.

The greatest challenge we have faced is in fact one of perception.

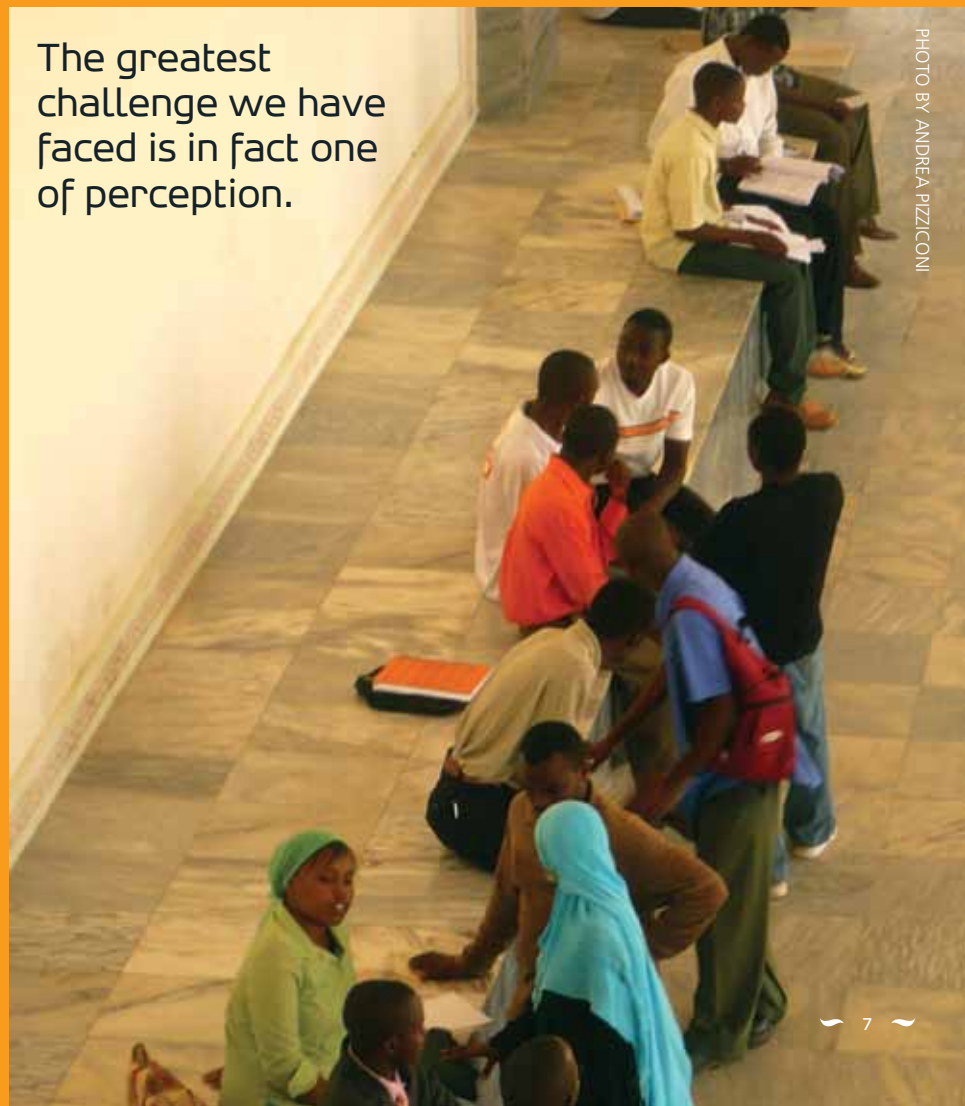


PHOTO BY ANDREA PIZZICONI

# CAPITALISING CONSTRUCTION

Building infrastructure to address unemployment in low-income countries. Musa Change (Kenya, 2013) – MPhil Engineering

What do we build, how do we build it and who are we building for? These are three critical questions that must be addressed as we tackle the problems around infrastructure in the developing world.

The first question is easy: everything. Developing countries suffer from inadequate (if existing) infrastructure, unsuitable transportation networks, poor access to water, insufficient energy grids, deficient healthcare systems and limited education and emergency facilities. The needs are evident and distressing.

The second question is not as straightforward. Technological advancement in construction is leading to leaner projects and faster building times. Satellite-guided pavers make light work of high-quality road construction. Prefabrication and modular construction are other examples. These techniques streamline the building process by cutting down on labour and associated costs. They are welcome improvements in, for example, economies where labour is very expensive or regions that need to build in quantity and do so fast. But is the state-of-the-art template the wisest approach for low-income countries?

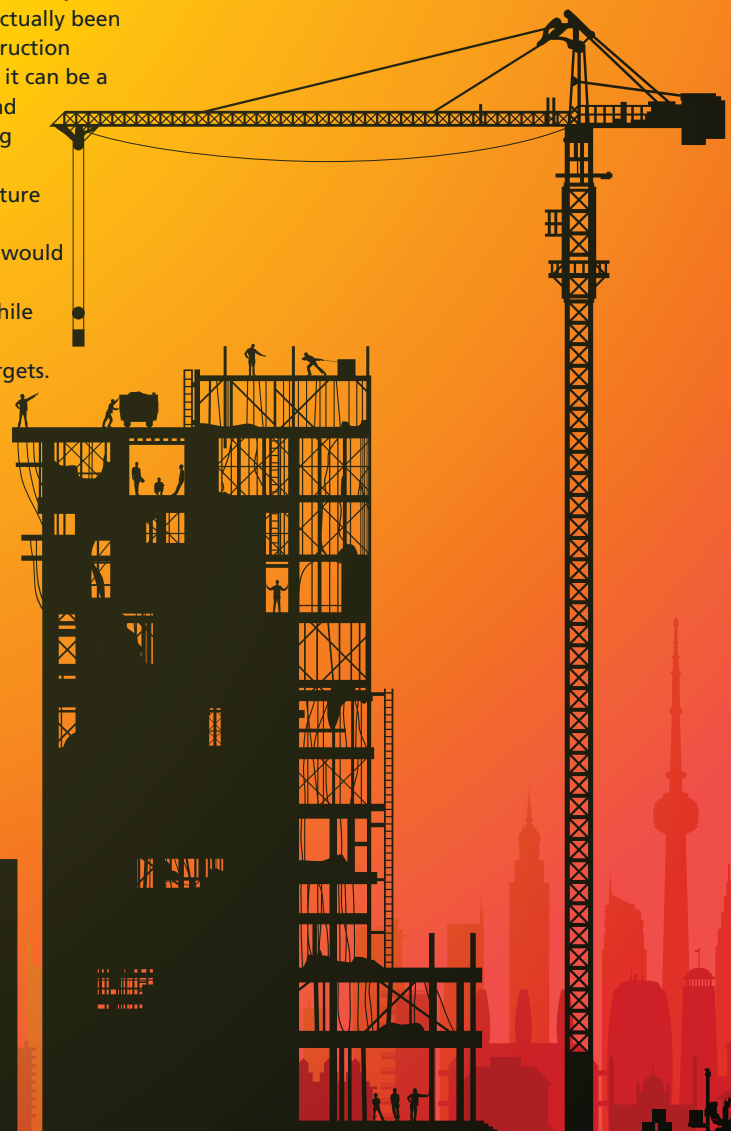
...if the construction process is capitalised upon, it can be a dynamo for job creation and skill development: a helping hand to the poor.

A recent survey by the International Labour Organization revealed some staggering statistics across many developing countries. In Cambodia, Egypt, Liberia, Malawi, Peru and Togo, over 60% of young adults are unemployed or relying on low-quality jobs with irregular incomes and little hope for material independence. Most developing nations are not faring much better.

This leads into the third question. Infrastructure is a crucial aspect of the struggle against poverty and joblessness, but it is a slow remedy, effectual only after it has actually been built. However, if the construction process is capitalised upon, it can be a dynamo for job creation and skill development; a helping hand to the poor. With the massive need for infrastructure in developing countries, labour-driven construction would help stem the immediate unemployment problem while simultaneously addressing long-term development targets.

There are important considerations tied in with this notion: project financing, quality training and urban versus rural appropriateness, among others. But job creation should have a seat at the table when decisions are made. Construction technology must be applied thoughtfully, not blindly. Create jobs. Generate incomes where there were none before. Build hope.

Biography: Musa is of Kenyan-Irish descent born and raised in Nairobi. Prior to Cambridge he studied civil engineering at the University of Waterloo (Canada).





# WEALTH FROM WASTE

**Business-oriented solutions for waste recovery in the developing world.** Luca Di Mario (Italy, 2009 & 2012) – MPhil and PhD Engineering

If there is a record I can claim, it is surely not that I have published in the best scientific journals or developed a ground-breaking technology but, perhaps, that my research focuses on one of the dirtiest topics of our society. Bluntly put, I investigate crap (yes, human and organic solid waste – intrinsically nasty, dirty and smelly).

## Resource, Recovery and Reuse (RRR) from waste makes sense.

As cities grow rapidly, urban municipalities in developing countries struggle to provide adequate sanitation services to cope with the increasing waste generation. Expressed in numbers, roughly 21% of the global urban population lack access to “improved” sanitation facilities, and 30% to 50% of waste generated in cities remains uncollected. Furthermore, where waste (solid waste, wastewater and latrine residues) is collected, most of it is discharged untreated into the environment. This results in health and environmental hazards for urban

communities, particularly in peri-urban and poor areas (e.g. slums) where there are fewer sanitation services. Moreover, from a resource standpoint, this is a huge waste of water, nutrients and energy, all of which are contained in and thrown out with solid organic and human waste.

Resource, Recovery and Reuse (RRR) from waste makes sense and can help in addressing the challenge described above. In fact, RRR decreases environmental pollution, can make available cheap resources to local communities and can help to recover costs associated with operation and maintenance of sanitation systems. However, to achieve true sustainability over the long term, a shift towards a business-oriented approach (in the form of private enterprise or public-private partnership) is required.

I have witnessed this shift in studying more than twenty successful and sustainable enterprises during my fieldwork across Latin America, Asia and Africa. From composting plants that produce fertilisers (from waste and latrine residues) to pit-emptying truck drivers that sell loads to farmers, RRR businesses create jobs that are

demonstrated to be safe, and they make more resources available to local communities.

The challenge now is to test if and how these businesses can be scaled up and what additional benefits or risks they may generate once at scale. This is the focus of my research, which is carried out with an interdisciplinary team of researchers from the International Water Management Institute (IWMI) and the Water and Sanitation in Developing Countries Department (SANDEC) of the Swiss Institute for Aquatic Research.

*Biography: Luca specialises in the field of sanitation and water management, where he has worked for two years on international development projects across Asia, Africa and Latin America.*



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# FIGHTING MICROBES WITH MICROBES

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Medicine and biofuels embrace ecology to address the limits of antibiotics. Devinn Lambert (USA, 2013) – MPhil Biological Sciences

In a natural environment, species compete, specialise and cooperate to develop a community that sustainably consumes all available resources. This defined allocation of resources buffers natural ecosystems from invaders. Conversely, the underutilised resources in man-made, sterile environments are prone to invasion because they work against natural ecological tendencies.

Take, for instance, medicine's approach to bacterial infection: there is a warlike mentality that the human body is a battlefield and the best strategy to fight microbial pathogens is antibiotic sterilisation. But, microbes armed with resistance genes survive sterilisation. This approach has forced medicine and microbes into an arms race. Now, society's decreasing ability to control antimicrobial resistance threatens the advancement of modern medicine (World Health Organization, 2014).

**There is a warlike mentality that the human body is a battlefield and the best strategy to fight microbial pathogens is antibiotic sterilisation.**

Algal biofuel production suffers from a similar pitfall. Biofuel reactions driven by a species of alga are spoiled when an undesired micro-organism invades the system. For an industry whose success depends on competing with cheap fossil fuels, spoiling imposes the financial burdens of



© Alex Rathus/Stock

lost time, reactor sterilisation and unsatisfactory yield.

In need for a new strategy, medicine and biofuels turn to ecology. For biofuel production, synthetic ecology offers a solution to the problem of contamination. This field promotes the study of native symbiotic and laboratory constructed dependencies of algae with other micro-organisms. Synthetic ecology asserts that if spoiling occurs when an invader seizes an underutilised resource, then contamination will be deterred in a culture designed to have that niche occupied. By harnessing species complexity to evade contamination, biofuels will become more cost competitive.

In medicine, multiple studies have demonstrated that recurrent *Clostridium difficile* infections, which defy antibiotic treatment, can be cured by fecal microbiota for transplantation

(FMT). In FMT, the infected individual is introduced to benevolent, donor micro-organisms which compete with the infectious microbe(s). A dramatic shift in medical practice, FMT embraces the ecological understanding that species complexity suppresses foreign invasion. The increased interest in FMT accentuates the growing notion that the human body is an ecosystem whose health is influenced by its non-human components. Reflecting this notion, in July, 2013, the U.S Food and Drug Administration announced that FMT treatment of *C. difficile* would be regarded as an investigational new drug.

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Biography: Devinn is interested in how molecular interactions drive biological processes, biotech and engagement with science-based public policy. After her MPhil, she will pursue a PhD at Cold Spring Harbor Laboratory.

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# STATISTICS OF STATINS

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## Do cholesterol-reducing statin drugs actually help prevent cardiovascular disease? Jerry Lee (USA, 2013) – MPhil Epidemiology

Cardiovascular disease (CVD) is the primary cause of death in the developed world. In the United States alone, 36 million Americans take cholesterol-lowering statin drugs to prevent heart attack and stroke. New guidelines from two leading heart organisations recommend statins for 30 million more.

In the November issue of *Circulation*, the American College of Cardiology and the American Heart Association published clinical guidelines that represent a remarkable shift toward a statistic-driven, population-based approach to CVD prevention. Instead of the traditional approach of targeting “at-risk” groups, a panel of experts concluded that an astounding third of all adults should be on statins. This

third constitutes people with one of four conditions: CVD, high cholesterol, diabetes above age 40 or a 7.5% likelihood of developing CVD within the next ten years.

**The prescription of statins for millions of adults based on non-generalisable data and a poorly designed tool is simply bad science.**

Clinicians can use an official “risk calculator” based on nine known risk factors (eg smoking, old age, male gender) to help estimate a patient’s risk for CVD, but this calculator is unverified under peer-review and derived only from very specific patient populations.

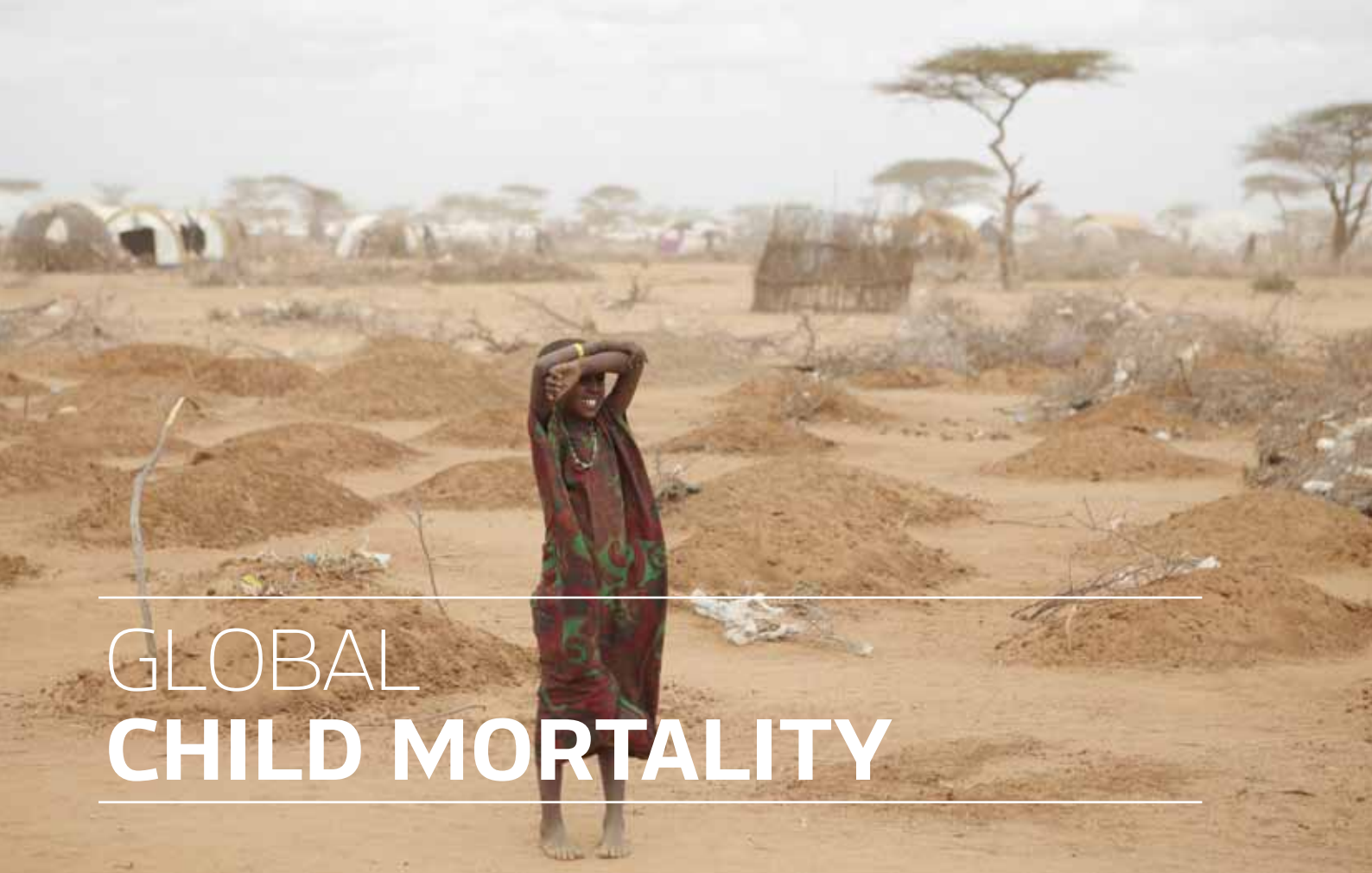
Since good statistics depend on careful sampling, the prescription of statins for millions of adults based on non-generalisable data and a poorly designed tool is simply bad science. In fact, there is little evidence that statins reduce disease or death in people who have not yet developed heart disease – raising questions as to whether statins are useful at all in preventing CVD in healthy adults. Statins are also currently recommended for people with a CVD risk exceeding 20%, but under the new guidelines, this threshold is lowered to 7.5%, again without scientific justification.

Proponents argue that full implementation of these guidelines could reduce the annual incidence of heart attack and stroke by 20-35%, with minimal side effects and no excess risk for major diseases. But this protracted debate probably reflects another case of “right intentions, wrong solution”, where blanket recommendations lead to a culture of over-medication without any disease reduction. With the global CVD epidemic and rising cost of healthcare looming, the virtue of these guidelines is that they at least identify a significant problem and one possible (if flawed) solution, which is commendable in a profession often plagued by precaution.

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Biography: Jerry Lee is interested cardiovascular health and regenerative medicine. He will be returning to the United States for an MD in the fall.





# GLOBAL CHILD MORTALITY

Tracking progress toward the United Nations goal to reduce deaths during childhood. Mikkel Oestergaard (Denmark, 2005) – PhD Genetic Epidemiology

Every day 18,000 children under the age of five die. That is 6.6 million deaths per year, of which 99% occur in developing countries. In Zimbabwe, the risk of dying before your fifth birthday is almost 19 times greater than in the United Kingdom – at about 90 deaths under the age of five per thousand live births in Zimbabwe versus about five deaths per thousand live births in the United Kingdom. Due to my experience as a member of the Mortality and Burden of Disease team at the World Health Organization (WHO), these statistics are depressing and very real to me. They capture the sad reality in developing countries and the global inequity in child health.

The Mortality and Burden of Disease team collaborates with other United Nations (UN) agencies and academia to estimate mortality and morbidity from the major causes of death in the world. One specific objective is the evaluation of country progress towards the Millennium Development Goal 4 (MDG-4). The MDG-4 was agreed upon at the UN

Millennium Summit in September 2000 to accelerate national and international efforts to reduce child mortality and to improve development by setting explicit targets. The MDG-4 target is the under-five mortality rate (deaths in children less than five years of age per thousand live births) in 2015 given a two-thirds reduction in the rate compared with 1990. The target is set for each country of the world and at the global level and is determined by the estimated baseline mortality levels for year 1990.

**Every day 18,000 children under the age of five die.**

A primary challenge for global burden of disease estimation is that the mortality is highest in countries and communities with the least information on these deaths. This inverse relationship requires development and use of fairly complex statistical methods to adequately model the

mortality in developing countries. WHO and its collaborators take a science-driven approach to tracking progress. An independent advisory group of academic experts advises WHO on methods; then, methods and results are published in peer-reviewed journals.

Final estimates are being used for advocacy and campaigning, as well as directly informing national and international policy-makers and non-governmental organisations to understand the public health burden and to prioritise investments of scarce health resources.

Biography: Mikkel Z Oestergaard works as a cancer scientist in the biotechnology company Hoffmann-La Roche. Before joining Roche, Mikkel worked at the World Health Organization in the Mortality and Burden of Disease team. His PhD was focused on integration of functional genomics and population-level data for systematic identification of breast cancer susceptibility genes.

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# A NEW ETHOS OF HEALTHCARE

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## A medical student's perspective on the future of US medicine

Lucinda Lai (USA, 2012) – MPhil Sociology

In the typical hierarchy of medicine, first-year medical students are at the bottom. Humbling, yes, but our induction into the newest class of future medical doctors in the USA has put us on the frontline of healthcare in the midst of reform. According to the 2013 International Health Policy Survey by The Commonwealth Fund, the USA spends more than any other nation on healthcare per capita (US\$ 8,508, compared to US\$ 5669 in Norway and US\$ 5,643 in Switzerland, the next highest spenders), but continues to fall short on quality, safety and access-to-care measures. The Affordable Care Act was signed into law in 2010 with the goals of increasing the quality and affordability of health insurance, reducing the number of uninsured and lowering the costs of healthcare.

**The new ethos of US medicine calls on medical doctors to recognise their responsibilities as stewards of society's limited healthcare resources.**

In a few years, my classmates and I will decide what kind of doctors we will be and go on to pursue specialty training in a healthcare landscape dramatically changed from the one we have today. Thirty million more people in the USA will gain access to healthcare without a corresponding increase in the number of doctors. The medicine we learn today must somehow meet the grand challenge of providing high-quality, sustainable and low-cost care to all citizens. This is the new ethos of US healthcare.



THE STETHOSCOPE, PERU, PHOTO BY ALEX PROIMOS, CC BY 2.0  
[http://commons.wikimedia.org/wiki/File:The\\_Stethoscope,\\_Peru.jpg](http://commons.wikimedia.org/wiki/File:The_Stethoscope,_Peru.jpg)

Too few medical students in the USA go into primary care, in part, because primary care physicians are underpaid and overworked compared to most other medical specialties. Our country's lack of investment in primary care led us to this crisis. Putting primary care back on the national health agenda will lead to better health, improved patient outcomes and lower-cost care overall.

Whereas the traditional medical narrative focused on the relationship between the physician and the patient, the scope is now broadening to systems-based care that maximises the core component of value. Value considers the cost of treatment relative to the health benefit conferred. To enhance value, health professionals need to learn to work together in multidisciplinary care teams as well

as make use of powerful health information technologies that will improve the coordination of care for patients with multiple, complex needs.

The new ethos of US medicine calls on medical doctors to recognise their responsibilities as stewards of society's limited healthcare resources. What we do for one patient must be done in the context of all our patients. The prevailing sense is that now, more than ever, we are in this together.

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**Biography:** Lucinda Lai is a first-year medical student at Harvard Medical School. She is interested in public service, policy leadership and the socio-political determinants of disease.

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# BEYOND BIOLOGY

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## The medical humanities as an emerging field

Erica Cao (USA, 2013) – MPhil Music Studies

In January 2014, the Cambridge University Medical Humanities Society (CUMHS) emerged as a new University-recognised student society. With its foundation came important questions about the medical humanities: What is it? What do the arts and humanities bring to medicine? What role would a medical humanities society play in this new discourse?

### What do the arts and humanities bring to medicine?

An attempt to define the medical humanities is difficult, in part because it is not yet a fully established area of study, and in part because it does not seek to be precisely defined. Rather, the nascent field of study exists fruitfully as a broad and dynamic conglomeration of ideas and perspectives. As such, “humanities” is a bit of a misnomer, for the medical humanities draws on interdisciplinary perspectives from the social sciences (eg psychology,

sociology, anthropology), arts (eg music, literature, visual arts) and humanities (eg history, philosophy, religion) to better understand the experiences, narratives and representations of health and illness that are often ignored by the biomedical sciences alone.

It is natural to be sceptical of the place of the humanities in a field as scientific as medicine. Yet, the humanistic and artistic side of medicine involves respecting the patient as a multi-dimensional, dynamic person. Therefore, the medical humanities brings to the forefront the human side of medicine, understood through, for example, literature on the patient and physician experience, psychological benefits of caregiver support during illness, music as therapeutic tool, everyday ethical dilemmas faced by physicians and the sociology and politics of healthcare. If medicine is first and foremost about the patient as a human, then the humanities in medicine should be of primary value.

“Study the science of art, and the art of science,” remarked Leonardo da Vinci – timelessly. The medical humanities promises to become increasingly relevant and necessary in present-day society, medicine and academia. With this in mind, the Cambridge University Medical Humanities Society seeks to explore and promote the medical humanities and to build transatlantic links to similar societies in the United States. Eventually, the aim is to create an international community of investigators and practitioners immersed in enriched and nuanced perspectives of medicine, health and disease, for a more passionate intellectual discourse and compassionate medicine.

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Biography: Erica Cao is completing her MPhil in Music Studies at the Cambridge Centre for Music and Science. She founded the Cambridge University Medical Humanities Society and will pursue an MD degree in the fall.





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# MOUTHING OFF

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Gender inequalities revealed through the historical female mouth  
Kathryn Crowcroft (Australia, 2011 & 2012) – PhD English

Looking to the historical body can reveal roots of gender inequalities and help us understand ingrained belief systems.

In early modern theological and medical thought, the mouth, and particularly the female mouth, was a site of moral ambiguity and contagion. Today, associations around the lips, tongue and teeth span from the functional and mundane to the improper or even immoral, yet rarely do we think about the social history of our bodies and how connections between the physical and ideological were established. The “Sins of the Tongue”, a tradition that warned against the lying, flattering, overused and gossiping tongue, among others, flourished throughout the Middle Ages and well into the nineteenth

century. Of the sins, only blasphemy is attributed more to male than female speakers (in the modern West, gossiping and swearing are still generally more associated with women and men respectively). The sins of the mouth are, for the most part, women’s sins; indeed, *lingua*, the Latin term for both “tongue” and “language”, is grammatically gendered female.

The idea of body parts as epistemological sites, places where knowledge can be attained and exchanged, is etymologically inscribed. Consider the tongue: the Latin verb *sapere* means both “to taste” and “to know”, and is related to *sapientia*: “wisdom”, “discernment”. Instigated by Eve, within humanity’s fall from paradise is the essence of the bite of the apple from the Tree of Knowledge itself, breaking down and apart; uncovering and opening out. Teeth too are associated with questions of epistemology (think wisdom teeth: *dens sapientiae*). Aristotle documented that “males have more numerous teeth than females”, and later in the

thirteenth century writers in some Christian traditions reiterated that “a man passeth a woman in reason, in sharpness of wit and understanding [...], in every kind of beast the males have more teeth than the females” (Bartholomeus Anglicus). Physiological design has moral imperatives: the inferior function of the female body expresses at an anatomical level their limited aptitude for sound judgement and knowledge acquisition.

Understanding the social history of the body can reveal often unexamined underlying systems of inequality. Revealing and coming to terms with these early structures of belief is the first step to tackling broader problems of discrimination in the present.

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Biography: Kathryn’s research lies at the interface of the philosophy of science and literary history. She works with organisations promoting literacy and numeracy in disadvantaged communities.

# NEWTON'S PRIVATE INK

## The intimate obsessions of a scientist

Sarah Dry (USA, 2003) – PhD History of Science

Isaac Newton mixed his own inks for writing. We know this because he recorded a recipe, including the black galls of the oak tree and a 'quart of strong beer', in a small notebook he used during his thirty years at Cambridge University. Newton's proud words – 'with this ink new made I wrote this' – remain dark and vivid some 350 years after he wrote them.

Newton used his ink to write some ten million words, most of which he shared with no one during his lifetime. In the nearly three hundred years since his death, they have had a dramatic impact on how he has been viewed.

When Isaac Newton died in March 1727, he was already a mythic figure,

a semi-divine genius whose reputation for scientific achievement and Christian piety was unrivalled. But behind the public image was a private man who left a legacy of writings unknown to all but a select few and sharply at odds with his enduring status as a scientist-saint. They reveal that his abiding obsession was not science but the study of theology, church history and alchemy.

In a new book, I tell the complete story of these papers for the first time: how they survived neglect, dispersal and disdain to finally receive a full scholarly examination in the 20th century. Cambridge University plays a central role in this history. Many of the papers were written in Newton's rooms at Trinity College, and it was

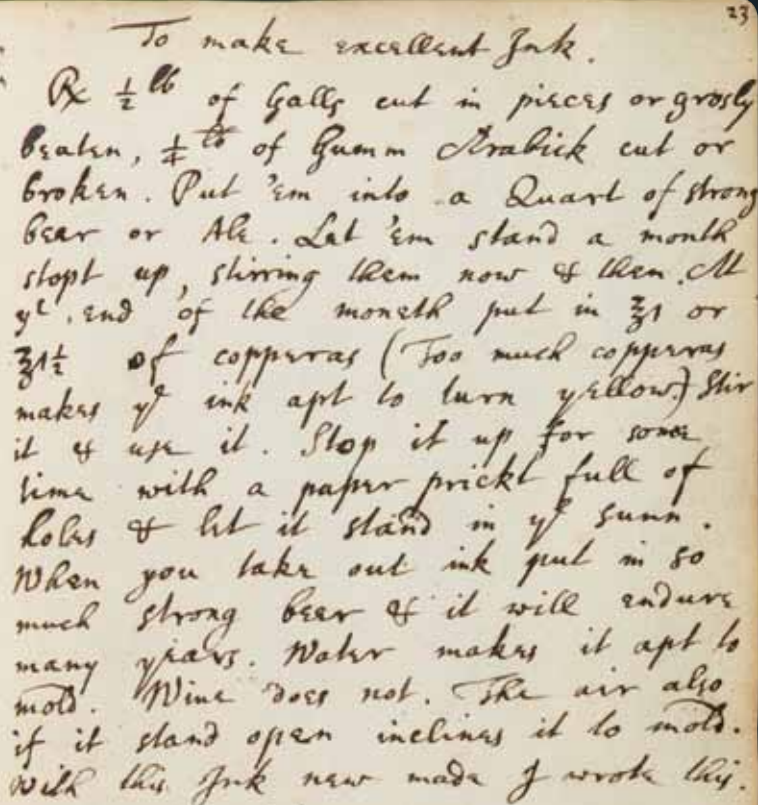
to the libraries at Trinity and King's Colleges, and to Cambridge University Library, that they would finally return centuries later. But although the scientific material was made accessible to scholars in the University Library in the 1880s, neither it nor the more confounding theological and alchemical material was to be seriously studied until the 1950s.

**Newton used his ink to write some ten million words, most of which he shared with no one during his lifetime.**

The variety of subject matter and the absence of mathematical rigor from most of the writings have challenged all who have glimpsed the papers over the years. How to account for a Newton of so many parts? What, if anything, links the disparate material together? For some, the absence of a unity of thought is distressing. For others, the idea that science, theology (much of it heretical) and alchemy might be deeply interlinked is even more so.

Tortuous and surprising as it is, the story of the papers is also remarkably repetitive. The 'secret' Newton of these papers has been discovered and re-discovered over the course of the past three centuries. The myth of a dark Newton, fermenting dangerous passions and mystical beliefs behind the curtain of his public self, turns out to be just as enduring as that of the scientist-saint.

Biography: Sarah Dry is a writer and historian of science. Her book *The Newton Papers: The Strange and True Odyssey of Isaac Newton's Manuscripts* is out now from Oxford University Press.



To make excellent Inke.

Rx  $\frac{1}{2}$  lb of Galls cut in pieces or grossly beaten,  $\frac{1}{4}$  lb of Gum Arabic cut or broken. Put 'em into a Quart of strong Beer or Ale. Let 'em stand a month stop't up, stirring them now & then. At ye end of the month put in  $\frac{3}{4}$  or  $3\frac{1}{2}$  of copperas (Too much copperas makes ye ink apt to turn yellow) stir it & use it. Stop it up for some time with a paper prickl full of holes & let it stand in ye sunn. When you take out ink put in so much strong beer & it will endure many years. Water makes it apt to mold. Wine does not. The air also if it stand open inclines it to mold. With this Inke new made I wrote this.

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# ONLINE OPERA



## New technologies for old music

Ilana Walder-Biesanz (USA, 2013) – MPhil European Literature

August 2012 saw the world premiere of Karlheinz Stockhausen's opera *Mittwoch aus Licht* ('Wednesday from Light'). The third scene, a string quartet, involves a complicated cast: two violinists, a violist, a cellist, four helicopter pilots and a large team of technicians. Cameras follow the instrumentalists out of the theatre as they board separate helicopters and play their music. Technicians mix the audio stream, which is sent (along with video) to the theatre. As complicated as that sounds, the 'helicopter string quartet' was actually first performed (separate from the rest of the opera) in 1995 and has been reprised fairly regularly since.

If a 'helicopter string quartet' is possible, surely an online opera is too. At least, that was our reasoning when six other singers including Judith Lebiez (France, 2013), pianist Naomi Woo (Canada, 2013) and I formed Opera Connect ([www.opera-connect.com](http://www.opera-connect.com)). On 8 December 2013, we performed Purcell's *Dido and Aeneas* entirely online. Except for Judith, Naomi and me, none of us had met in person. We had only sung together via Google+ Hangouts, the same medium we used to perform.

We couldn't afford helicopters, or even expensive microphones. Our small budget, provided by a grant from the Awesome Without Borders foundation, went towards hiring our pianist. Funding wasn't the only issue: scheduling rehearsals across time zones with differences of up to eight hours was also tricky. In addition, internet lags forced us to abandon the idea of using video (lags decreased when only audio was transmitted) and required singers to adjust their timing, anticipating rather than singing with the distant accompanist.

Three Gates  
Cambridge Scholars  
participated in the  
world's first online  
opera: a production  
of Purcell's *Dido  
and Aeneas* that  
was rehearsed and  
performed entirely  
over the Internet.

On the whole, the results of the project were mixed. The problem of lags was resolvable with sufficient rehearsal and technical ingenuity. The audio was not synced for all performers, but we arranged for everyone to be synced from the perspective of the accompanist, and streamed the performance publicly from that side. However, typical laptop microphones could not do justice to the singers' performances, especially because many automatically equalise input volume. Our low-budget production was a valuable experiment, but it taught us that widespread consumer technology is not up to the demands of online opera yet. A fully realised online opera company would need both better equipment and technicians. We could do without helicopter pilots, though.

Biography: Ilana spends every spare moment in rehearsals or on-stage in plays, musicals and operas. She writes articles and reviews for *Opera21*, *Opera Vivrá*, and *Bachtrack*.

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# A GOOD DEATH

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## Who should decide how we die?

Christina Schweitzer (Canada, 2013) – PhD Immunology

The Lent Term debate on the legalisation of assisted suicide at the Cambridge Union puts the spotlight on a question with no easy answers.

If you knew you were terminally ill, and that in your last few months you would lose your independence, function and suffer unbearable pain, would you want the option to end your life with dignity and on your own terms, at a time, place and in a manner of your choosing? What if you needed help?

You wouldn't be alone: between two-thirds and three-quarters of respondents from twelve Western European countries surveyed in 2012 said they could imagine opting for assisted suicide if they suffered from an incurable illness, uncontrollable pain or a serious disability.

While public opinion has shifted towards a more liberal moral conception of suicide and the personal

right to die, assisted suicide and euthanasia are legal in only a handful of countries. The European Court of Human Rights has declared that while an individual has a right to decide how and when to die, they do not have the right to be assisted in committing suicide.

The law in England and Wales states that while suicide itself is no longer a crime, assisting a suicide is punishable by up to fourteen years in prison. However, guidelines issued in 2010 by the Director of Public Prosecutions lay out a number of conditions whereby charges would not be laid against someone acting out of compassion. Not only are the prosecution guidelines in direct contradiction of the law: they leave patients, families and physicians in a state of legal uncertainty.

Opponents of legalisation say it would put vulnerable people – the disabled, elderly and mentally ill – at greater

risk of being pressured into suicide. Christian opposition groups emphasise the "sanctity of life" argument, where life in all of its forms is considered infinitely precious and should be protected, and that only God has the right to decide when a person will die. Opinion among physicians is divided and varies between countries, with opponents asserting the Hippocratic tradition of "first, do no harm". Yet, could it be that helping to end a patient's suffering at their request, by assisting in their death, is a merciful act that prevents further harm?

We will all die one day – the discussion over who gets to decide how it will happen is a debate we all have a stake in.

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*Biography: Christina is a PhD student in Immunology, researching vaccines for HIV and influenza, and is interested in the intersection of medicine, science and policy.*

Assisted suicide and euthanasia are legal in only a handful of countries.



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# DEMOCRACY COMING TO A HALT?

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## Making sense of the US government shutdown

Victor Roy (USA, 2009 & 2013) – PhD Sociology

*O I see flashing that this America is only  
you and me,  
Its power, weapons, testimony, are you  
and me, ...  
Freedom, language, poems,  
employments, are you and me,  
Past, present, future, are you and me.*

Walt Whitman,  
"By Blue Ontario's Shore"

When the leaders of the two opposing political parties in the United States reached an impasse over the federal budget in October 2013, my country's government shut down for over two weeks.

Politicians and citizens argued bitterly over how the government had arrived at complete stasis. Having just moved to Cambridge, I tried to grasp for Whitman's "you and me", but the poet's idea seemed drowned by distance and discord. Amidst the tumult of opinion and blame, I wondered how to make sense of democracy coming to a halt.

Initially I felt anger - anger that the pettiness in our politics caused uncertainty for millions of low-income families relying on educational and social services for a fair future, difficulty for the government-funded scientist whose next experiment was delayed and trouble for my parents, whose jobs are in part based on government contracts.

Amidst the tumult and blame, I wondered how to make sense of democracy coming to a halt.

Perhaps looking for hope, Martha Nussbaum's *Political Emotion: Why Love Matters for Justice* caught my attention. Nussbaum's project, broadly one of promoting "civic love", seemed a timely read. I reflected on her idea of "political emotions", which she uses to examine how citizens engage with one another and their country. She identifies and contrasts two philosophical and artistic traditions: one of emotional solidarity without spaces for critical freedom, and the other, endorsed by Nussbaum, of a solidarity accompanied by more varied and open spaces of conversation, inspired by sources as disparate as lyric poetry, public art and even comedy.

In short, Nussbaum challenges us to reflect on the intention with which active citizenship, nurtured by the arts, public discussion and educational systems, is critical to governance. These ongoing practices give life to America as an imagined community and allow diversity within our politics.

These notions can often feel poorly defined, but it's this fuzziness of "nation" that allows for the more rigid apparatuses of "state" to be injected with new ideas and fresh commitments; this is the essence of Whitman's "you and me".

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Biography: Victor Roy is a candidate for the MD at Northwestern University and a PhD in Sociology at the University of Cambridge, working at the intersection of political economy, values and health.



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# POLITICAL ELITES IN NIGERIA

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## Dynamics and challenges of ethnicity and elite politics in Africa's largest democracy.

Wale Adebawwi (Nigeria, 2003) – PhD Social Anthropology

Ethnographic studies of the elite in post-independent Africa are rare. Despite the fact that this has been noted by scholars since the 1960s, there are still insufficient attempts at remedying this gap in scholarship. Indeed, even beyond Africa, anthropological focus on the elite has been the exception rather than the rule. The politico-intellectual genealogy of anthropology is the fundamental explanation for this. Another reason for the paucity of scholarly literature on the elites in non-Western societies was the 'personal, moral and ideological sympathies' that Western ethnographers had (and still have) for those at the lower rungs of the power ladder.

### The corporate agency of the elite transformed the modern history and politics of the Yorùbá.

My ethnographic study of the Yorùbá progressive political elite for a doctoral degree at Cambridge, which was funded by the Gates Cambridge Trust, was conceived against this backdrop.

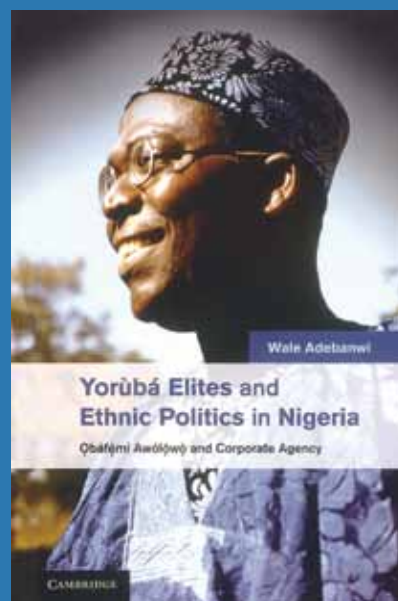
*Yorùbá Elites and Ethnic Politics in Nigeria: Ọbáfẹmi Awólọwọ and Corporate Agency*, the product of my study – which was recently published by Cambridge University Press (New York, 2014) – reflects the challenges and advantages of ethnographic

research on the elite by someone who is a product of the same culture as those he is studying, and one who, through many years of ethnographic interactions with the elite, became 'one of them'.

Combining the perspectives and disciplinary methods of anthropology, historical sociology and political science, the book – which is the first authoritative scholarly book on the political elites of one of the largest ethnic groups in Africa – investigates the dynamics and challenges of ethnicity and elite politics in Nigeria, Africa's largest democracy. I attempt to demonstrate how the corporate agency of the elite transformed the modern history and politics of the Yorùbá. The argument is organised around the ideas and cultural representations of Ọbáfẹmi Awólọwọ, the central signifier of modern Yorùbá culture. The book examines the structure and agency of Yorùbá socio-cultural and political life over the *longue durée*, including political party, ethnic group organisation, cultural politics, democratic struggle, personal ambitions, group solidarity, death, memory and other hitherto unexplored undercurrents of one of the most powerful and progressive elite groups in Africa.

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**Biography:** Wale Adebawwi is an Associate Professor of African American and African Studies at University of California, Davis and author of *Yorùbá Elites and Ethnic Politics in Nigeria: Ọbáfẹmi Awólọwọ and Corporate Agency*.



COVER DESIGN BY DAVID LEVY.

COVER PHOTO BY ELIOT ELISOFON (ELISOFON PHOTOGRAPHIC ARCHIVES, NATIONAL MUSEUM OF AFRICAN ART, SMITHSONIAN INSTITUTION)

# CRISIS IN THE UKRAINE

## A Scholar's inside view on current events

Svitlana Kobzar (Ukraine, 2005) – PhD International Studies

The EuroMaidan movement, a two-month wave of Ukrainian civil unrest climaxing in February 2014 with the impeachment of President Yanukovych, has demonstrated that many Ukrainians could no longer tolerate the government's corruption, brutality and violence and, more importantly, the lack of any genuine signs that such regime was willing to change. European integration became associated with the opportunity to break away from a deeply dysfunctional system of governance.

At the same time, while many Ukrainians share close historical and family ties with Russia, Putin's regime came to symbolise many things that Ukrainians could not tolerate anymore: a high level of corruption, authoritarianism, lack of media freedom and continuous lies by government officials to its people – traits that, for many, were reminiscent of those exhibited by Soviet governments.

In the course of the EuroMaidan protest, many activists went missing, and some were found tortured and killed. It was therefore not surprising when over 85% of the protesters (according to the poll conducted by the Democratic Initiatives I. Kucheriva) stated that they were willing to stand on Maidan until President Yanukovych resigned. The president's term brought such misery and disillusion that his staying in power became unbearable for the EuroMaidan protesters, who were supported by over 50% of Ukrainians.

The Russian media, in turn, has portrayed EuroMaidan in a different way. Considering that 52% of Russians trust federal media, according to Levada-Center, it is no surprise that 45% of Russians believed that EuroMaidan was the product of Western secret services. The level of anti-Ukrainian and

anti-Western propaganda in the Russian media has been at all times high, reaching even some of the Ukrainians in eastern and southern regions who watch Russian TV.

After Yanukovych fled, Ukrainians found themselves emotionally exhausted (there were more than 100 people killed in a few days alone). Ukraine was also on the brink of economic collapse. President Putin wasted little time and used Ukrainian weaknesses to annex Crimea, while persuading many Russians that such actions were necessary to support the Russian speakers who were 'under threat' (an allegation that was not supported by any evidence).

Despite the strong criticism from the international community, Russia's actions continued to fuel tensions within Ukraine. Russian troops close to the Ukrainian border gave confidence to the pro-Russian 'separatists' groups who were mixed in their ultimate goals. Some called for joining Russia while others for greater autonomy from Ukraine. What has been clear is that such groups have continued the tradition of the old

regime of using torture, beatings and intimidation to deal with those who speak up for the unity of Ukraine.

The May 2014 Pew poll has shown that 77% of Ukrainians nationwide believe that their country should remain united, a goal shared by 70% of those living in the country's east. At the same time the International Republic Institute's poll has shown that in April 2014 most Ukrainians in all parts of the country do not support Russian military intervention and do not believe that Russian speakers are under threat.

While the crisis has united many Ukrainians, with growing violence, media manipulation and uncertainty, it can also divide the nation. Russia's attempt to keep Ukraine in its 'sphere of influence' may achieve the opposite result as well as create a zone of lawlessness and instability.

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Biography: Prof. Svitlana A. Kobzar is Head of Department of International Affairs at Vesalius College in Brussels.



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# PROFESSIONAL UPDATES

2001



**Dhiraj Nayyar (India – M.Phil Development Studies)** was appointed CEO of the Think India Foundation, a public

policy advocacy initiative of Network 18, one of India's largest media groups. He was also appointed Editor-at-large of *Firstpost*. Dhiraj was awarded a Bastiat Prize in Journalism in New York in November 2013.

2002



**Oliver Rinne (Germany – PhD Experimental Psychology)** received the 2013 von Kaven Award for Mathematics

of the German Research Foundation for his work in general relativity. The award was conferred for the eighth time and is generally presented to early career researchers in mathematics in the Heisenberg Programme to honour outstanding achievements.



**Jennifer Piscopo (USA – MPhil Geographical Research)** assumed her new position as Assistant Professor of Politics at Occidental

College in Los Angeles, CA in August 2013.

2003



**Wale Adebani's (Nigeria – PhD Social Anthropology)** new book, *Yorùbá Elites and Ethnic Politics in Nigeria: Obafemi*

*Awolowo and Corporate Agency* was published by the Cambridge University Press (New York) in April 2014.

2004



**Katherine Epstein (USA - MPhil International Relations)** published her first book, *Torpedo: Inventing the Military-Industrial*

*Complex in the United States and Great Britain* (Harvard University Press), in January 2014.

2005



**Ingrid Nelson (USA – MPhil Geographical Research)** began a new tenure-track Assistant Professor position

in the Department of Geography and the Environmental Studies Program at the University of Vermont in August 2013.

Ingrid's research reported that sex-based differences in TB prevalence represent real epidemiological differences not simply explained by outside biases. They propose that these biases have implications for models of TB dynamics in countries with skewed population sex ratios such as China and India, and should be incorporated into models for TB control and forecasting.

Nelson, I. L. (2013). The allure and privileging of danger over everyday practice in field research. *Area*, 45(4), 419-425.

2006



**David Deitz (USA – MPhil History and Philosophy of Science and Medicine)** started a new job in August

2013 working for SEHA (the largest healthcare provider in Abu Dhabi) as the Senior Manager for Business Development working on a mixture of internal improvement, cost reduction, strategic service line growth and acquisition work for the hospital group.



**Jonathan Hollander's (USA – PhD Materials Science)** company, Applied Biorefinery Sciences, was awarded a capital

grant of \$881,960 by the New York Economic Development Council. The grant will partially fund construction of a technology demonstration facility in upstate NY producing sustainable goods from bio-renewable resources.



**Martial Ndeffo Mbah (Cameroon – PhD Mathematical Biology)** developed a transmission model which indicated that a community-

based intervention which reduces the transmission of *S. haematobium* is an economically attractive strategy for reducing schistosomiasis and HIV transmission in sub-Saharan Africa.

Mbah, M. L. N., Kjetland, E. F., Atkins, K. E., Poolman, E. M., Orenstein, E. W., Meyers, L. A., ... & Galvani, A. P. (2013). Cost-effectiveness of a community-based intervention for reducing the transmission of *Schistosoma haematobium* and HIV in Africa. *Proceedings of the National Academy of Sciences*, 110(19), 7952-7957.

## 2008



**Corina Logan's (US – PhD Experimental Psychology)** wild bird field site became a "Science in Action" exhibit at the Santa Barbara Zoo, where

she commented on a new bird brain scanning technique in a Science feature and video-blogged about her field adventures in New Caledonia at the National Geographic Explorers Journal.

Corina's research highlights the importance of investigating functional differences in post-conflict affiliative behavior according to the role played in the conflict.

Logan, C. J., Ostojić, L., & Clayton, N. S. (2013). Rook, But Not Jackdaw, Post-Conflict Third-Party Affiliation Reduces Aggression for Aggressors. *Ethology*, 119(5), 427-435.



**Noah Isserman (USA – PhD Geography)** accepted a dual appointment as Assistant Professor of Business

Administration and Social Work (visiting) at the University of Illinois where he is directing and facilitating a university-wide initiative in social innovation. He started in January 2014 and is keen to hear from and collaborate with members of the Gates Cambridge community.

## 2009



**Gitte Marianne Hansen (Denmark – PhD Japanese Studies)** accepted a permanent lectureship in Japanese Studies at the School of Modern Languages at Newcastle University.



**Emily Jordan (USA – PhD Experimental Psychology)** recently became a senior analyst at Sociable

Pharma, a London-based pharmaceutical consulting firm, where she is focused on understanding changes in the clinical treatment of HIV and hepatitis C as well as the co-infection of these diseases.



Using chemistry of fossil carbonate shells, **Yama Dixit (India – PhD Earth Sciences)** reported an abrupt monsoon

weakening and drying on the northwest Indian plains about 4100 years ago, providing the first evidence of the role of climate change in the collapse of the urban phase of the ancient Indus civilisation.

Dixit, Y., Hodell, D. A., & Petrie, C. A. (2014). Abrupt weakening of the summer monsoon in northwest India~ 4100 yr ago. *Geology*, G35236-1.

## 2011



**Tara Cookson (Canada - PhD Geography)** was awarded the 2014 Bill Gates Senior Prize in recognition of her outstanding research,

dedication to improving the lives of others and work to promote the professional development of Gates Cambridge Scholars.

## 2012



**Grecia Gonzalez (USA – PhD Biochemistry)** and the Radial Genomics team won the Breast Cancer Startup Challenge Business

Plan Competition in March 2014 for their award-winning business plan based on the upcoming cancer diagnostics startup, Radial Genomics. Grecia will proceed as co-founder of the new startup.



**Michael Young (USA – MPhil Philosophy)** reviewed the history and motivations behind medical repatriation, the transfer

of undocumented patients in need of sub-acute care to their country of origin, arguing that involuntary medical repatriation violates the ethical duties of health care providers.

Young, M. J., & Lehmann, L. S. (2014). Undocumented injustice? Medical repatriation and the ends of health care. *The New England Journal of Medicine*, 370(7), 669-673.

## 2013



**Isaac Holeman (USA – PhD Management Studies)** was listed in Forbes Magazine as one of the top 30 social entrepreneurs under the age of 30

for his work founding Medic Mobile. He was also recognised as the outstanding young alumnus of the year by his alma mater, Lewis & Clark College.



**Timothy Kotin (Ghana – MPhil Engineering for Sustainable Development)** joined IBM's new commercial research lab in Africa

as a Research Scientist. The IBM Africa Research lab is dedicated to developing technological solutions to address the grand challenges of Africa across education, agriculture, water and sanitation, energy, healthcare and financial inclusion. Timothy is both excited and humbled to be part of the vision.



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