

LONDON'S GLOBAL UNIVERSITY
DEPARTMENT OF SCIENCE & TECHNOLOGY STUDIES



UCL

Alchemy

UNDERSTANDING SCIENCE

The newsletter of the Department of Science & Technology Studies /// Spring 2017

Welcome to *Alchemy*

Highlights

03

Undergraduate Experiences

- 03 A meeting with Sir David Attenborough
- 04 Undergrad shorts

05

Masters Experiences

- 05 Endless *Horizons*
- 06 Making waves in S&T
- 06 STS Student Awards 2016

07

PhD Experiences

- 07 Science and policymaking: Reflections from a global meeting
- 08 Who lives and who dies?
- 09 In search of the Purple Pitcher

11

Alumni News

- 11 First joint Spanish and Portuguese STS meeting
- 11 Where in the world?

12

Staff News

- 12 Professor Jon Agar awarded RS medal
- 13 Rethinking Joseph Banks
- 14 Teaching Fellow arrivals
- 15 New editors
- 16 The Bookshelf
- 18 Volcanic action

20

Departmental News

- 20 STS Seminars
- 21 STS OneBook Events 2017
- 21 'We Want You to Live'
- 22 InEdita

If you last saw us at STS20, our reunion in 2013 to celebrate twenty years of BSc programmes, you'll barely recognise the place now. Since, we've grown in staff, degrees, reputation, and most importantly, students. STS is buzzing with brilliant, energetic, ambitious people at every level. So much activity. So many stories. Sometimes, we forget to stop and take a breath. We forget to find time for surveying where we have been and what we've accomplished together.

With this first edition, STS launches *Alchemy*. We'll make an annual stock of our accomplishments to help you keep up. It'll offer a means for highlighting student successes, staff comings and goings, recent developments in our research, the arrival of new programmes, and so much more. In fact, we've had trouble packing it all in.

For me, it's been twenty years in STS. That's a lifetime! We've done so very much since. But we have a lot more to do, too. University life is changing rapidly. STS is leading the pack, with new curriculum and new ideas long before others even notice a need for change. Our records of success with employability and adaptation speak for themselves. The flexibility of STS graduates and staff is second to none. Every page of *Alchemy* shows us leaping ahead.

What's up with me, you ask? Lots. Along with my twenty-year pin this year, I've become a British citizen. I got married. That was in St Pancras station, and we had a brilliant reception in the UCL quad on a lovely July evening. Meanwhile, I've moved from South London to the coast. It's weird not to be on a London bus every day! I was asked by the Provost to continue as Head of Department for a second term. I brought my film night series to an end, after more than a decade. That was sad, and hard to do. But we're developing something different for me in public engagement, and we need to make room. My work on Crystal Palace Dinosaurs continues, and I have some writing in the pipeline that completes some projects begun a long time ago. Did I tell you about the pony that ate my phone? That'll have to wait for the next edition.

Each of us has stories to tell, and we want to include you. Follow us on social media; add us to your streams. Explore our online materials. Read our publications. Don't forget to contribute something of your own. If nothing else, drop us a line. Send us your story. Post a few photographs. Remember, once STS; always STS.

Professor Joe Cain
STS Head of Department



Professor Joe Cain © David Weightman

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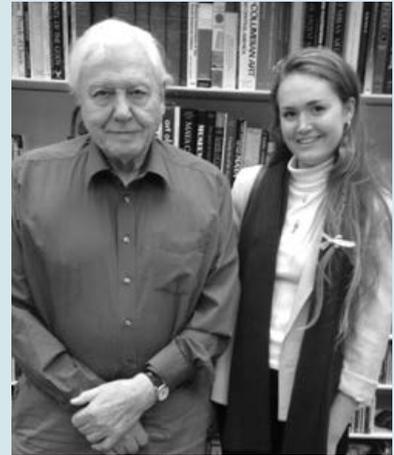
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A meeting with Sir David Attenborough

by **Kate Balding** (3rd year, BSc History and Philosophy of Science)

Around a month ago, and based very much on the mentality ‘you have nothing to lose’, I sat down to write a letter. It was perhaps a naïve and optimistic letter crafted with the help of my supervisor Jean-Baptiste but I popped it into the letter box regardless as I walked home.



Kate with Sir David

Two weeks passed and I had quite forgotten about it as I came home late that Monday evening from a day trip to the Cambridge University Archives. Yet, sitting on my desk awaiting my return was an envelope. In disbelief I read its contents. “I would be glad to help you with your dissertation research into the history of the modern conservation movement in Britain. May I suggest you give me a call to arrange a mutually convenient time for you to come here? Yours, David Attenborough”.

A flat meeting was called and euphoria followed. This lasted until the following day when I sat outside the department staring at the name ‘David Attenborough’ now in the contacts list of my phone, and wondering what to do with it. Courage mustered and with a little help from the department office in deciphering the number in slightly scrawled hand, the phone rang and I waited, and the phone rang, and I waited and then – “hello?”.

It was a woman’s voice and I admit I was somewhat relieved. Assuming it was a PA I explained the motive of my call. “Oh hang on – David! (she called back from the phone), Kate’s on the phone for you!”. I had little time to register what was going on when in the background I heard an iconic voice. “Ah yes Kate, hang on let me just find my diary” and then with no pre-warning Attenborough took up the phone. “Hello Kate. Sorry about that I was just looking for my diary, how does Friday sound? It’ll have to be early I’m afraid, not as early as 5:00am mind you” he chuckled “but how about 9:30?”. Deciding my lecture that morning was prooobably second in importance just this once, I confirmed. With the call concluded, I sat in the STS corridor and proceeded to wonder quite what had just happened.

“I WOULD BE GLAD TO HELP YOU WITH YOUR DISSERTATION RESEARCH INTO THE HISTORY OF THE MODERN CONSERVATION MOVEMENT IN BRITAIN. MAY I SUGGEST YOU GIVE ME A CALL TO ARRANGE A MUTUALLY CONVENIENT TIME FOR YOU TO COME HERE? YOURS, DAVID ATTENBOROUGH”

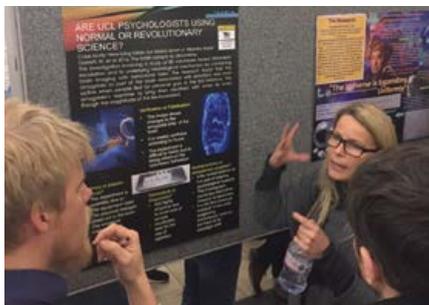
Friday came and I found myself standing somewhere in Richmond opposite the road to a blue house with a palm tree out the front. As I stood bolstering myself the door opened. It was him. He looked up at me quizzically. “Kate?” he asked. I do not quite remember how I confirmed this assertion – perhaps I nodded, or said something confident and controlled like “Ah Sir David, lovely to finally meet you”, but more likely I stood and gaped a bit. Actually I think I tried to make some sort of remark about squirrels that I instantly regretted but somehow he seemed to overlook this moronic display and I found myself following Attenborough down his garden path and into his home.

Here I met his daughter and original recipient of my call, Susan – and the three of us built rapport the only way we British knew how, by discussing the weather. Now seated in a beautiful large room with roaring fire, grand piano and shelves and shelves of books, Susan brought David and I a tray dressed with tea pot and biscuits. The atmosphere was easy, and after signing my interview disclosure form, I clicked on my audio recorder, settled back with my cup and saucer and began the interview.

I had around twenty questions covering broad themes of the British conservation movement and more specific queries about the role of the BBC and individuals such as Peter Scott and after every question followed a detailed and articular answer – which is not something every 90 year old can claim to do. Soon I had enough material to keep me very busy indeed and as I turned to thank him and click off my device I remarked that it had in fact been my first interview of anyone ever, and I wondered how I did. “Oh quite alright” he smiled – and that was quite alright for me.

After a cheeky photo and a fond farewell I found myself leaving Sir David Attenborough’s house very aware of what unique experience I had just had. To give up your time for an unknown undergraduate simply for their dissertation is the sign of a very kind man indeed and I can’t think of many other departments or universities where such early morning ‘research trips’ have quite the same character. So, whatever nook or cranny of STS you find interesting, think boldly and get out there!

Undergrad shorts



Philosophy in Posters: Research under the philosophical lens

Ten 1st year student-groups presented their philosophical ideas on an area of very recent scientific research being carried out by UCL's very own scientists. 'Research under the philosophical lens' included recent work from the physics department on the rate of cosmological expansion, research into the underlying mechanisms of epilepsy, work from psychology on lying habits and much more. Students asked such questions as "why is this research science rather than pseudoscience?", "is this an instance of Kuhnian Normal Science?", "does this research pass Popper's test of falsification?". Held in the UCL South Cloisters the posters created discussions both within STS and across UCL; mission accomplished!

Science in action: visiting ZSL London Zoo

We once loved zoos; they stood as an important symbol of science at its best. In the 21st century, this changed. Zoos are at the centre of many debates about the role of science in society, about the limits of human-animal interactions, and about the future of biodiversity in the wild. As part of the STS third year module 'Zoos in Science and Culture', students had the opportunity to visit several different types of zoo spaces in London, and to think about the role of zoos as centres of science, science communication, and cultural engagement. Here's a snap of them in the wild.



Interning in New York

"I always knew that I wanted to spend time abroad, and the long summer between second and third year seemed like the perfect opportunity. So, after endless amounts of Google-searching, I managed to find an internship in New York City for 2 months. Being able to live and work in my favourite city in the world (other than London!) was such an amazing experience, both personally and professionally.

The internship itself was in DUMBO (Acronym for 'Down Under the Manhattan Bridge Overpass'), in Brooklyn. I worked for the Business Improvement District there, a non-profit organisation who are responsible for everything that goes on in the area; each district of New York City has one. My particular role was the Marketing and Media, primarily writing blogs, conducting interviews and updating the website and social media. But each day was different, and I spent very little time sitting in the office. I think this is why I enjoyed the job so much. Getting to know the local area and working closely with the businesses and was my favourite part of the job, and I met so many inspiring people.

I was also responsible for the events, and every Thursday DUMBO hosted live music in the Archway under the Manhattan Bridge. It is the most incredible venue for a concert, with each week creating a unique atmosphere from the acts, including everything from salsa, to the blues.

DUMBO is an especially scenic area of New York, as it overlooks both the Manhattan and Brooklyn Bridges, as well as the whole of the East Manhattan skyline. So, there were always a lot of photoshoots and filming going on. This means, we often liaised with the film crews about cordoning off certain parts of the area. As a thank you gift from them... tickets to the world premiere of *Suicide Squad*! The film may have received mixed reviews, but at least I can say I watched the first screening in the same room as Jared Leto, Will Smith and Margot Robbie.

Outside of the job, I had a lot of free time to enjoy the city. I lived on the Upper East Side of Manhattan with other interns, who have become such good friends of mine. Arriving in time for 4th July celebrations, spending the day on Coney Island and watching the Macy's fireworks, was definitely a highlight. As was the New York food scene. So, if you're ever in the city and looking for a place to go... I might just know a few (especially if it's brunch!)."

Bethan Flaherty

A summer internship classifying the declassified

"Last summer for my research studentship with Professor Brian Balmer, I analysed declassified archival documents from the Arms Control and Disarmament Department in the Foreign and Commonwealth Office. In particular, I looked at the United Kingdom's chemical and biological warfare policies from the 1980s to understand how evidence was constructed to steer policy decisions and disseminate certain knowledge to the public. As the standards for inferring what constitutes a chemical or biological weapon were inconsistent throughout the records, I showed how policy makers with ideological commitments were able to leverage uncertainties to their advantage – for instance, as with the assessment of the probability of a negative sample result in an uncontrolled environment. Such internal interpretations framed policies – while deliberately ambiguous public statements, formed on such rationale, shaped debate and maintained the autonomy of policymakers."

Yeugenia Kleiner

Science Communication across the Mathematical and Physical Sciences Faculty

As part of their assignments, UCL Natural Sciences students in the module 'Scientific Communication' created blogs and podcasts on the research conducted by scientists at UCL. You can read some of the blog entries at https://medium.com/@maps_2001.



One group of students created a wonderful podcast on our own STS Dr Norma Morris' work on patients' participating in medical research <https://soundcloud.com/maps2001/volunteering-in-biomedical-science>

Endless Horizons

In the Master degree module Science, Media and Culture, we try to reflect on how the media contribute in making science part of culture, but also contribute in science. The module introduces STS concepts through the angle the study of science in the media. Part of the module is dedicated to providing students with the opportunity to meet with media producers and hear them talking about their practice. This year, we were lucky to host Steve Crabtree, Editor of the longest running science television programme in the world, BBC's *Horizon* report two UCL students **Aminah Suhail** and **Lauren Collee**.

BBC *Horizon* Editor, Steve Crabtree gave an inspirational (and somewhat myth-debunking) talk to UCL MSc History, Philosophy, Science and Technology students on Wednesday 23 November 2016. Crabtree took us through six decades of *Horizon* episodes, starting with *The Knowledge Explosion* (1964), in which science fiction writer Arthur C Clarke makes several predictions about the state of the future world: some startlingly accurate, some not so much. Working his way through the decades, Crabtree played us one selected clip from each, which demonstrated the distinct style and approach that was specific to its time. A notable example is the 1972 episode *Shadows of Bliss*, which explains quantum mechanics with the help of a psychedelic soundtrack and some visual effects that Crabtree aptly described as “a bit trippy”. Not all the examples were chosen for their merit – an episode from the 90s for Crabtree embodied “everything I don’t like about television”. But it is precisely this lack of uniformity that makes *Horizon* so exciting: there is no ‘house style’.

Crabtree selects his subject matter according to the LAB model – ‘Lifestyle’, ‘Anything’, and ‘Big Science’ – which is used to ensure the coverage of a wide range of scientific material across the episodes. He also shed light on how each episode consists of three elements, or rather, acts, creating a ‘narrative arc’ similar to structures used in fictional composition. Above all, *Horizon*’s team are gifted storytellers.

When asked about his own editing style, Crabtree explained that his main aim as Editor of *Horizon* is to ensure each episode remains cinematic and theatrical, like a standalone movie. While the editing team follows the BBC’s mantra to ‘educate, entertain and inform’, Crabtree highlighted how the true essence of *Horizon* lies in its ability to offer a window into the latest scientific trends, re-inventing itself as each new and contentious conquest arises in unexpected and unprecedented ways.

For more information see:
Twitter @SteveJCrabtree

‘WORKING HIS WAY THROUGH THE DECADES, CRABTREE PLAYED US ONE SELECTED CLIP FROM EACH, WHICH DEMONSTRATED THE DISTINCT STYLE AND APPROACH THAT WAS SPECIFIC TO ITS TIME.’



Steve Crabtree, Editor of *Horizon* (BBC) holds the VerCiência 2014 Special Award trophy
© SergioMCBrandao

Making waves in S&T



The Maker Fayre



Makerversity

For my Science, Technology & Society MSc dissertation I researched the UK 'maker movement', a community of technologists and craftspeople who operate communal machine shops (called makerspaces or hackerspaces) and organise events to teach making skills and promote hand-made and small batch goods writes **Emma O'Sullivan**.

Globally, the maker movement has attracted academic attention as a potential site for public engagement with science and technology and for sustainable technology design and production, but academic literature was lacking a clear definition of what the maker movement is, what makers do, and what their goals, values and practices are. I was interested in investigating these questions in the context of the maker movement in the UK and carried out semi-structured interviews with 19 people to find out what making means to them and how people get involved with the maker community.

I was interested in this because I'd been involved with my local maker group for a few years before starting my MSc and had seen how much people can benefit from being part of the maker movement: I'd met people who'd used makerspaces to teach themselves new skills and then used those skills to get a new job or start their own business, and people who'd found new social lives by joining a group of like-minded makers. Because makerspaces provide people with tools for making one-off or bespoke items they're also useful for solving problems, whether it's a photographer who needs a custom-made camera stand or a child who needs an affordable prosthetic hand. The question of who gets to use these spaces, and who thinks of themselves as a 'maker', was an important part of thinking about who benefits from the community's resources.

I found from talking to interview participants from different areas of the maker community that there's a general lack of

consensus about what a 'maker' is and what activities they engage in: this can be useful as it lets people from different creative and technical practices join the community and share knowledge across disciplinary boundaries, but it can also mean that someone has a specific idea about makers (like thinking that all they're interested in is electronics and 3D printers) that makes them feel that being a maker isn't 'for them'. But I also found that it's not really necessary for someone to personally identify as a maker for them to participate in the community: it was more important to share a set of values focussed on knowledge sharing, community, problem solving, and a sense of personal empowerment that comes from making things yourself.

Since finishing my MSc I've started a PhD in the STS department focussing on issues of inclusion in the maker community along gender lines and looking into ways that the maker movement can make science and technology more engaging for women. Makerspaces have a lot of potential for engaging people with little previous technology experience as they operate outside formal education structures and let people pick up skills that are relevant to them at their own pace, but many makerspaces are still male-dominated spaces. I'm interested in why these spaces are still failing to engage women despite many of the more formal barriers to entry being lowered, and whether this can tell us anything about women's lack of engagement with technology in other areas such as employment and higher education.

STS Student Awards 2016

Each year, STS awards prizes to students who have achieved outstanding work. In 2016, the following students were the ones we felt most deserving.

The Kathleen Lonsdale prize is awarded for overall academic performance in an STS MSc course – this year, the prize was split between Gregory Bridgman and Brian Kantor, both of whom excelled across the taught and research components of the course.

Likewise, the award for best dissertation was split three ways, with the following dissertations all being awarded top marks:

- **Brian Kantor:** *Performing 'the Authoritative Account': How the BBC's Horizon Produces Knowledge*
- **Emma O'Sullivan:** *Who's In and Who's Out: The State of the Field of the UK Maker Movement*
- **Mathis Overkamp:** *Concepts of the Gene and Precision Medicine: Exercises in Making Nature Intelligible*

Amongst our undergraduates, three students were commended on the MAPS faculty Dean's list. With commendations going to the top 5% of graduating students, STS punched well above its weight – our congratulations go to Amy White and Theresa Reisch (BSc Science and Society) and Anna Dadaian (BSc History and Philosophy of Science).

Unsurprisingly, these were the three highest scoring undergraduate students in the STS 2015/16 class. In addition, Harriet Hall achieved the highest grade in our iBSc programme, Bethan Flaherty and Hanruo Feng shared the prize for 2nd year students, and Rebecca Hodges achieved our Year 1 prize. Finally, Camilla Tetley and Salma Begum were awarded a prize for their contributions to the STS department.

A whole-hearted congratulations to all of the above!

Science and policymaking: Reflections from a global meeting

Over the last two days of September 600 scientists, policymakers, and *knowledge brokers* from all over the world gathered in Brussels to discuss how to *improve dialogue between science and policymaking* writes **Alessandro Allegra**.

The global conference, organised by the European Commission and the *International Network for Government Science Advice (INGSA)*, started from a very simple premise: as science and technology inform our understanding of the world, and permeate all aspects of our lives, how do we ensure they are best embedded into effective policymaking?

Although no *simple and straightforward answer* to this questions exists, several important points were made during the two days of discussion that can contribute to a better understanding of the process of scientific advice to policymaking. Here I discuss a few that I found particularly interesting.

The social and political context of scientific advice

As remarked in the opening of the conference, scientific advisors are often called in to deal with what is referred to as *post-normal science*, situations where facts are uncertain, values are in dispute, stakes are high, and decisions urgent.

Science does not exist in a social and political vacuum, and even less so does the process through which it informs policymaking. In a democratic setting, facts alone cannot determine policy decisions. As noted by the EU Commissioner for Research Carlos Moedas, the role of scientific advisors is not to provide answers, but to provide evidence and options and open up the process through which those are obtained.

Scientific advisors as brokers and storytellers

Scientific advisors operate within a complex ecosystem of politicians, public and private institutions, civil society, media and public debate. As emphasised by *Sir Peter Gluckman*, New Zealand's Chief Science Advisor and Chair of INGSA, "We are in the business of evidence brokerage, between science, policy & society." According to Sir Peter, the most important skill for a scientific advisor is to be able maintain the trust of all those involved in the process, including of course scientists themselves.

Scientific advisors work across different communities, each with its own individual thought style and language, and with different ways of making sense of the world. Although talking about data and facts might be the preferred mode of sense-making for scientists engaged in their research, this requires translation to be fruitfully used in a policy setting. As one of the conference participants put it: "Don't ask a Minister if they want science advice, ask her/him if they want to know what works!"

Socially, the way we make sense of the world we live in, and the way we describe it to others, is through narratives, not data points. Story-telling and story-listening therefore emerged as paramount to an effective knowledge brokerage process.

The role of social and human sciences

Given the recognition of this social and narrative dimension of the scientific advisory process, it should come as no surprise that the need to go beyond the natural sciences to include insight from social sciences and humanities was raised by many participants and met with broad support.

As an aspiring social scientists studying the issue, I embrace the view taken by some of the conference organisers that scientific advice to policymaking is itself a social process, as outlined above, and therefore aptly subject to critical investigation by the social and human sciences. These disciplines have an important role to play in providing useful insight and critical reflection on the outcomes and dynamics of the process, and suggesting how to improve it. Perhaps a *new science of science advice* could pave the way to answering the opening question.

Read more about *Royal Society of Biology's work in science policy*.

Original article is on: <https://blog.rsb.org.uk/science-and-policymaking-reflections-from-a-global-meeting>



'SCIENCE DOES NOT EXIST IN A SOCIAL AND POLITICAL VACUUM, AND EVEN LESS SO DOES THE PROCESS THROUGH WHICH IT INFORMS POLICYMAKING. IN A DEMOCRATIC SETTING, FACTS ALONE CANNOT DETERMINE POLICY DECISIONS.'

Who lives and who dies?

The early days of Home Dialysis: a Project for the Science Museum by Farrah Lawrence

Early home dialysis machinery. Image © Science Museum, London

I was contracted over the summer to do some work on the science museum's medical exhibit. They are reorganising their collections on the history of medicine over the next year or so and I was asked to look at the history of home dialysis, a practice that was taken on with gusto in the UK during the 1960s.

The first patient to be placed on home dialysis was Olga Heppell. She was selected, primarily, because she was a nurse and her husband, an engineer, had constructed a dialysis machine for home use. Her husband's ability to repair the machine and her medical training meant placing Olga on home dialysis was less of a leap of faith for her doctors. They could send her home, relatively secure in the knowledge that both her and her husband would be able to deal with mechanical and medical issues.

Olga's doctors were happy with her progress. Hospital beds and dialysis machines were freed up so more patients could be accepted onto the oversubscribed programme.

However, even with the freeing up of hospital beds and the wish to move patients onto home dialysis, machines were extremely expensive, and placing patients on home dialysis was challenging. Patients had to be taught how to use the machines, have around the clock support, make alterations to their homes (or be rehoused), require support systems of families and friends and, perhaps the greatest difficulty of all, patients and doctors had to understand and accept their new roles and responsibilities in the administration of long term medical care. Not only this, but patients frequently suffered mental and physical stress in taking their treatment home that led to several suicides and cases of depression for patients and their families.

These barriers did not stop the programme. However, they did create certain stipulations for

'THE STORY OF MOREEN AND HOME DIALYSIS HIGHLIGHT SOME OF THE ETHICAL PROBLEMS OF SELECTION.'

who could and could not be taken onto home dialysis. The lucky few were most commonly accepted based upon their marital status, age, intellect and lack of other diseases that could complicate matters. The moral assumptions that this selection criteria made were starkly apparent, yet the doctors that were allegedly responsible for making the decisions on who would and would not be taken on often passed the buck, declaring that the decision was made so early that only those that would be accepted were even referred to them. This is proven false by the notes of the Royal Free Hospital renal unit committee that demonstrate that the doctors involved made clear decisions on who to accept, rejecting, for example a woman who could not speak English well enough and a man whose wife appeared unable to cope with the trials of the treatment.

It was under these circumstances that Moreen Lewis was originally barred from home dialysis. She was older than they usually considered, in her thirties by the time her condition had progressed, and she was unmarried. Her family consisted of her mother, and a fiancé that did not live with her. The Science Museum were particularly interested in Moreen's story as she was eventually taken on to the home dialysis programme despite not fitting the usual social parameters. They know this because her machine, that she had dubbed Dr Who, was donated to the museum by her mother and resides in their collection to this day.

Moreen could purchase a machine and get herself onto the programme because her wealthy Welsh uncle paid the fee of £7,000 to Dr Stanley Sheldon, a pioneer of the treatment of renal failure at home. Dr Sheldon had set up the National Kidney Centre for the treatment of renal patients to demonstrate to the NHS that the programme could work.

Moreen learnt how to use the machine, though it was a great struggle, over several weeks in the centre before being moved to a friend's house while she waited for her new, purpose-built home to be built in Middlesex. Once this was completed she could move in and begin her home treatment properly. She faced many of the problems that others encountered during her time on dialysis, from leakages in the machine to the physical and mental space that the machine took up in her home and life and that of her mother. While Moreen disappears from the records, she likely passed away some time before her machine was donated to the museum in 1977.

The story of Moreen and home dialysis highlight some of the ethical problems of selection. Moreen was not considered because she was too old and she was unmarried. The fact that she had a group of devoted friends and an elderly mother who loved her was not considered. Her rejection was based upon a social construct of human value, made justifiable by the veneer of clinical reasoning and professional trust. Moreen's life was diminished, like so many others, to a list of qualities; Was she married? The box is ticked or crossed. Did she have children? Tick or cross. Would she go back to work? Tick or cross. Her humanity was removed to make selection easier.

However, her selection by the National Kidney Centre, set up to broaden the NHS's selection criteria was not based upon age or pre-existing illness. It was based on the patient and their family's ability to obtain £7,000, the average price of two houses in 1965. Due to the costs of treatment, and the risks, the early days of home dialysis treatment were plagued by the moral and social concerns for the medical profession and their right and ability to provide lifesaving treatments to a selected few.

The story does not end there. The new medicine gallery will be opening in 2019 at the Science Museum. However, if you want to delve into the ever-fascinating world of medical history before then, a temporary display is available: Journeys through Medicine: Henry Wellcome's Legacy.

For more on Olga as the first home dialysis patient view this film: www.britishpathe.com/video/mechanical-kidney-saves-wifes-life



In search of the Purple Pitcher

by **Farrah Lawrence** a current STS PhD student

When I landed at Halifax airport I did not know what to expect. I had been studying the history of medicine in the city for nearly a year but only knew the place through the brief descriptions in nineteenth century newspaper articles that made Halifax seem like nothing more than a military fort with a few Mi'kmaq encampments scattered nearby. **WHY AM I THERE?**

Today it's a commercial port that is dominated by the large universities in the downtown area (the population almost doubles when the academic year starts), while it also acts as a centre for tourism in the province of Nova Scotia.

I was visiting the city so that I could comb through the Nova Scotia Public Archives and the Dalhousie University Special Collections as I try to uncover the narrative of a medical plant, the *Sarracenia Purpurea* or Purple Pitcher Plant that was used as a cure for the devastating disease of smallpox by the Mi'kmaq doctress Sally Paul. This curative was adopted by Halagonians (residents of Halifax) during the 1860s with some success and even more controversy.

I had been struggling to find anything substantial, while in the UK, about the elusive Sally Paul. The problems of finding native voices within historical sources is well documented, and my research has been no different. However, the Public Archives brought up some tantalising hints of Sally's life.

I found her in a list of Mi'kmaq men, women and children vaccinated in Dartmouth in the early 1840s, alongside her husband Francis Paul, who would later become chief at Shebunacadie. She also appeared in accounts in many of the local papers as well as in the legislatures records when a petition to patent her curative was brought in front of the Nova Scotia assembly. The petition was tabled and ignored.

Later she appeared in the papers again. One of her strongest advocates, John Thomas Lane, an Irish immigrant and customs

officer that had been trying his hand in the world of herbal patent remedies, wrote that in desperation he wished to advertise the curative and Sally's rights concerning its use and sale. It had been ignored by the legislature and she may, therefore, lose out as charlatans sold it with no concern for her rights. Lane's protestations were, of course, a little hypocritical. He said that she had been charging a fee of twenty-five shillings for the remedy. He would charge thirty, taking his cut.

The medical society of Nova Scotia also wrote letters concerning Sally and her curative to the provincial governor, Joseph Howe, indicating that they would test its usefulness. It transpired that their tests involved a few visits to a poor labourer and his family who claimed to have recovered using the Pitcher Plant. The doctors that visited him decided that the remedy was not the cause of his recovery and

Fortunately, while Sally can only be glimpsed through the accounts of others, there was a wealth of information on the other actors involved in the promotion and rejection of the *Sarracenia Purpurea* allowing me to produce an account of the use of the curative by Halagonians more broadly.

When the archives were closed, I had the chance to look around the city. It's a fascinating place with a rich history. I spent hours in the Maritime Museum, Pier 21 and the Citadel Museum, and even had time for a brewery tour at Alexander Keith's (founded in 1820 its one of the oldest breweries in North America.)

I happened to be visiting during the Atlantic Fringe Festival which meant that there were quite a few free performances in some of the most stunning parts of the city, my personal favourite being a production of *As You Like It* performed in the vast Point Pleasant Park on the remains of the old Battery.

I even got out of the city for a day to visit the tiny fishing village of Peggy's Cove.

In the fog the village had an eerie charm, disrupted only a little by the sheer number of tourists. Piles of lobster pots sat outside weathered wooden shakes while waves battered the craggy grey rocks of the coast. My glasses got smeary with salt from the spray. Sadly, this was the only excursion I could afford, time and money being too valuable to spend.

Despite this the trip was incredible, it helped to push my research into some interesting new directions. With so little on Sally Paul available I am having to approach my

'I WAS VISITING THE CITY SO THAT I COULD COMB THROUGH THE NOVA SCOTIA PUBLIC ARCHIVES AND THE DALHOUSIE UNIVERSITY SPECIAL COLLECTIONS AS I TRY TO UNCOVER THE NARRATIVE OF A MEDICAL PLANT, THE *SARRACENIA PURPUREA* OR PURPLE PITCHER PLANT THAT WAS USED AS A CURE FOR THE DEVASTATING DISEASE OF SMALLPOX BY THE MI'KMAW DOCTRESS SALLY PAUL.'

therefore decided that it was a "humbug" sold by a juggler (Lane), and taken from the hands of a native, a group that the medical elite of Halifax had little respect for, especially when it came to medicine.

These are only tantalising hints of Sally and her life. Being both a woman and Mi'kmaq, even these small glimpses are more than one would normally expect.

However, with nothing written in her own hand my research in Halifax has led me to re-shape elements of my thesis.

thesis in a new way, helped by the wealth of information available on the people of Halifax and their communities. I am excited about this new direction and feel very lucky to have been able to have been able to visit such an amazing place.

This trip was made possible thanks to the PhD Travel Bursary that I received from the STS department here at UCL. The money was raised through the PhD book sale, that was hugely effective and we hope to run again this year.

PhD Experiences in brief

STS continues to have a thriving PhD community that are active in all aspects of life within the department, and active globally conducting research or presenting at academic conferences. Here's what some of them got up to in 2016.

A warm welcome

We are delighted that we have four new PhD students joining STS this year:

Alessandro Allegra

Working Title: *European cultures for the use of science in policy-making*

Emma O'Sullivan

Working Title: *Gender and the Maker Community: How can the maker movement redefine gender/technology relations?*

Edward Bankes

Working Title: *"With a name like 'Miss Information' she must know something": Exploring the role of science in TV comedy'*

Joseph Brown

Working Title: *The Land Experiments in Colour Vision. Business, Intellectual Property, and the Basic Research Laboratory.*

Congratulations, STS Doctors!

Our faculty and staff are extremely proud of our young doctorates who have accomplished this task with their hard work. Congratulations on your achievements in 2016; we wish you a successful and bright future ahead.

- **Yin Chung Au:** *Synthesising heterogeneity: trends of visuality in biological sciences circa 1970s – 2000s*
- **Yafeng Shan:** *Exemplarising Science: From Mendel to de Vries*
- **Melanie Smallman:** *The impact of 10 years of public dialogue in science*
- **Sara Peres:** *Breeding resilience: plant biodiversity and climate change*

Cheer Zhang

About the STGlobal Conference

Sponsored by The American Association for the Advancement of Science and the National Academies of Science and Engineering house and supervised by Prof. Brain Balmer, Cheer Zhang attended STGlobal Conference in Washington D.C. in April 2016 with a 15 minute presentation on *Nixon Administration and Biological Weapons Convention (BWC)*. STGlobal Conference is a vibrant science & technology studies (STS), and science & technology policy (STP) conference produced by faculty from Virginia Tech, George Washington University, Georgetown University, and University Drexel. Attendance typically



consists of 100 – 180 people from upwards of 25 universities and brings in students from both domestic and international institutions. This year the conference took place in April in Washington DC, where panels looked at themes such as the politics of big science, values in technological design, participatory knowledge production, human-environment relationships, and governance.

Huiping 's travel of history of science: Tracing the footprints of Antarctic Exploration heroes

In March 2016, I travelled to a number of locations across the UK and north Europe, devoted to tracing the footprints of some Antarctic explorers in the Heroic Age of Antarctic Exploration, for example, Captain Scott, Sir Shackleton, and Roald Amundsen.

The Heroic Age of Antarctic Exploration was an era beginning at the end of the 19th century and closing with Shackleton's Imperial Trans-Antarctic Expedition. During this period, about 1000 people set out to the Antarctic Exploration and more than 750 of them never came back. Among the survivors, Captain Scott, Sir Shackleton, and Roald Amundsen are regarded as the most remarkable heroes in legend.

Captain Robert Falcon Scott (1868–1912) was a British Royal Navy officer and explorer. He led two expeditions to the Antarctic regions: the Discovery Expedition, 1901–1904, and the Terra Nova Expedition, 1910–1913. Captain Scott did not win the race of getting to the South Pole but he and his crew spent much time on scientific observations and researches. They took back very valuable penguin eggs, ancient plants' fossils and other geologic

samples. They also collected a lot of biological, geologic, physical and meteorological data.

Roald Amundsen (1872–1928) was a Norwegian explorer of Polar Regions. He won the first to reach the South Pole on 14 December 1911 during his Antarctic Expedition from 1910 to 1912. In 1926, he set out the expedition to the North Pole. His ship was the *Fram* ('Forward'), earlier used by Fridtjof Nansen, and now is displayed in the Fram Museum in Oslo. *Fram* was the only ship, which reached to both of the South Pole and the North Pole.

Sir Ernest Henry Shackleton (1874–1922) was a British polar explorer, who led three British expeditions to the Antarctic. After Roald Amundsen won the South Pole race, Shackleton made his expedition of crossing the Antarctica from sea to sea via the pole, 1914–17. In his trip, the crew met big disaster of asperity and snowstorm. Shackleton and a few crewmembers conducted an open-boat journey. By launching the little lifeboat *James Caird*, Shackleton and colleagues finally reached the Elephant Island and got rescue. All of his crew returned to Britain safely.

Huiping Chu – a current STS PhD student in her final year



Sir Ernest Shackleton © Wikimedia

'FOR SCIENTIFIC DISCOVERY GIVE ME SCOTT; FOR SPEED AND EFFICIENCY OF TRAVEL GIVE ME AMUNDSEN; BUT WHEN DISASTER STRIKES AND ALL HOPE IS GONE, GET DOWN ON YOUR KNEES AND PRAY FOR SHACKLETON.'

Sir Raymond Priestly
Antarctic Explorer and Geologist.

Alumni news



First joint Spanish and Portuguese STS meeting

Alumni and Honorary Research Associates co-organise the first joint Spanish and Portuguese STS meeting.

Sara Peres, a recently graduated PhD student and Dr Meritxell Ramirez-i-Olle, an Honorary Research Associate, are members of the organising committee of the first ever joint meeting of the Spanish and Portuguese STS network. The meeting will take place in Lisbon, Instituto de Ciências Sociais da Universidade de Lisboa (www.ics.ulisboa.pt) from the 7th to 9th of June 2017 with the following title: *Lost in Translation? People, Technologies for Practices and Concepts Across Boundaries*. Attendance to the meeting will be open and free of charge.

Portugal and Spain share many things but they are also divided by several boundaries – political, linguistic, historical, technological. Part of a same peninsula, they are nonetheless entities on their own right: two countries, two political systems, several languages, and, furthermore, two academic systems, two STS communities. In a way, they represent two sides of a border. And yet, as Science and Technology Studies (STS) have taught us, borders and boundaries are far from being self-evident. An STS perspective shows that boundaries are continuously traversed, continuously challenged, continuously re-made. It also shows that maintaining boundaries is a performative practice, which requires separation and integration, difference and translation as well as interdigitation and transgression. In fact, maintaining borders forcefully requires objects, people and information that can pass through such borders.

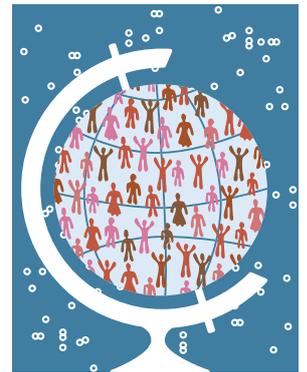
This meeting aims to be an opportunity for STS scholars in Spain, Portugal and elsewhere to meet and share their social, academic, epistemological and political experiences generated by the difficulties and opportunities arising from crossing territorial, linguistic, disciplinary, and professional boundaries. Sara and Meritxell welcome proposals for papers, communications, audiovisual presentations and alternative formats.

If interested please see further information on: <https://redesccts.wordpress.com/2016/12/06/lost-in-translation-people-technologies-practices-and-concepts-across-boundaries>

Where in the world?

With the help of the UCL Careers service, we have been looking at where people went next after taking an STS degree, and the results are intriguing.

STS alumni have very varied careers. That is the finding of a survey of students who attended the Department of Science and Technology Studies between 1999 and 2012, and who use the LinkedIn social network. Broadly speaking, the top three areas of employment were research, education and media and communications work. The next four sectors were business development, social services, healthcare and finance.



We also found out that most alumni live in the United Kingdom, but a significant proportion have careers abroad, in countries from the United States and Canada to the Czech Republic and Egypt.

Going into the finer detail, it is fascinating to see that almost everyone works in a different organisation. In other words, there are only two organisations with two STS alumni (I wonder if they know each other?): the tech consultants Trilateral Research and the academic London School of Economics. Everyone else is spread out as singletons, taking their STS skills to bodies as varied as Digital Health London, Google, Credit Suisse and the United States Senate.

All in all, the data shows that an STS degree equips its alumni with the knowledge and skills to go nearly anywhere. The information has been useful to us in several ways. It tells us that STS alumni are not all making similar career paths – this has shaped how we offer careers advice to the students currently with us at UCL. It also helps answer the question that every sixth-form applicant has in their mind: what can this degree be a stepping stone to? We now have a deeper evidence base to show applicants what a range of careers are possible.

What explains the pattern? The feedback we have suggests that it is the mixture of science and the humanities, the ability to be comfortable and skilled in analysing a technical issue, while having the communications ability to tell an audience what the analysis shows, that appeals to employers. There is also great flexibility – great for choice, and an advantage in a world that is changing fast.

Staff news

Professor Jon Agar awarded RS Medal



The outstanding achievements of a member of the STS department has been recognised by the Royal Society, the UK's national Academy of science, in this year's Awards and Prizes announcement.

Professor Jon Agar, who has been teaching at STS since 2007, has won the Wilkins-Bernal-Medawar Medal and Lecture in recognition of his work in the history of science, publishing research on issues including twentieth-century science and technology, the history of computing, and the history of radio astronomy. Jon writes on contemporary technologies, including mobile phones and ID cards, and the history of modern science and technology.

Professor Agar said: "I am delighted and humbled to be awarded the Wilkins-Medawar-Bernal prize by the Royal Society. Bernal asked how science should work within wider society, and that is a question that I continue to ask. The award is welcome recognition of contextual history of twentieth-century science and technology, of which I am one practitioner among many."

As part of the award Professor Agar will give the annual Wilkins-Bernal-Medawar lecture in 2017 on an aspect of the social function, philosophy or history of science.

Fond farewells

Thanks to Dr Carole Reeves and Professor Steve Miller

In June 2016, Senior Lecturer Carole Reeves retired from academia to pursue other creative endeavours. Carole Reeves has a PhD in history of



medicine (University of London) and additional qualifications in education, photography, film and television production. She has worked as a medical illustrator, and was, for over twenty years, a freelance writer/director, communicating medicine and science both to specialist and public audiences. She is a Fellow of the Institute of Medical Illustrators, the British Institute of Professional Photographers, and the Linnean Society. We miss her greatly and wish her all the best in her new future, although as an honorary Senior Lecturer at STS we hope she will be back soon to keep us posted.

At the end of 2016 Professor Steve Miller fully retired. Steve has had a joint appointment as Professor of Science Communication in STS, and of Planetary Science, in Physics and Astronomy. Steve has a long history both within STS, and at UCL STS. In Steve's early days he ran and wrote for *The Labour Herald*, a weekly campaigning newspaper edited by Ken Livingstone and Ted Knight. The paper closed in 1986 when the political climate after end of the miners' strike and Maggie Thatcher's abolition of the Greater London Council and other major (Labour-controlled) local authorities became too difficult to raise the funds needed to support it. Steve joined UCL in October 1986 as a post-graduate programmer working his way up to post-doctoral research fellow, lecturer, senior lecturer, reader and finally professor. Being a founder member of the department of STS, from 1993 onwards, and then Head of Department in Science and Technology Studies (STS) between 2002 and 2011, Steve states this was 'probably the best thing I have ever done'; we agree! Steve helped secure STS as a strong department and dodging

various potential mergers or movements of the department. As a result of Steve's strong leadership STS has grown to be the largest STS department in the country, propelled and continued by Prof Joe Cain, current head of department.

Steve has had an incredibly active career at STS. He co-authored (with Jane Gregory) what is still one of the most popular introductions to public understanding

of science – Science in Public: communication, culture and credibility (1998) – based on several years of research into public attitudes towards and involvement with science, and teaching scientists



young and old how to communicate with their fellow citizens. He has also trained some 200+ of Europe's leading scientists in public engagement through the European Science Communication network (ESConet), of which he was director. In recent months Steve has finished his role as the UCL Principal Investigator for a European project called Responsible Research and Innovation Tools. UCL is the UK Hub for Responsible Research and Innovation (RRI), one of more than 20 across the European Union.

We will miss Steve greatly, as will the rest of UCL. He's been thanked by UCL Doctoral School for the many years hard work training UCL's MPhil and PhD students in science communication of all kinds. Steve always provided engaging and well balanced teaching, mixing theoretical background with practical applications, and giving students a rare chance to create a take-away concept of work, that students could take with them outside the classroom. We wish Steve many happy years enjoying his home in Hilo, Hawaii, and hope he will return to keep us updated of his latest adventures. Thank you Steve and we wish you all the very best.



STS's conference presentations in 2016

Professor Gregory's keynote paper and inaugural lecture

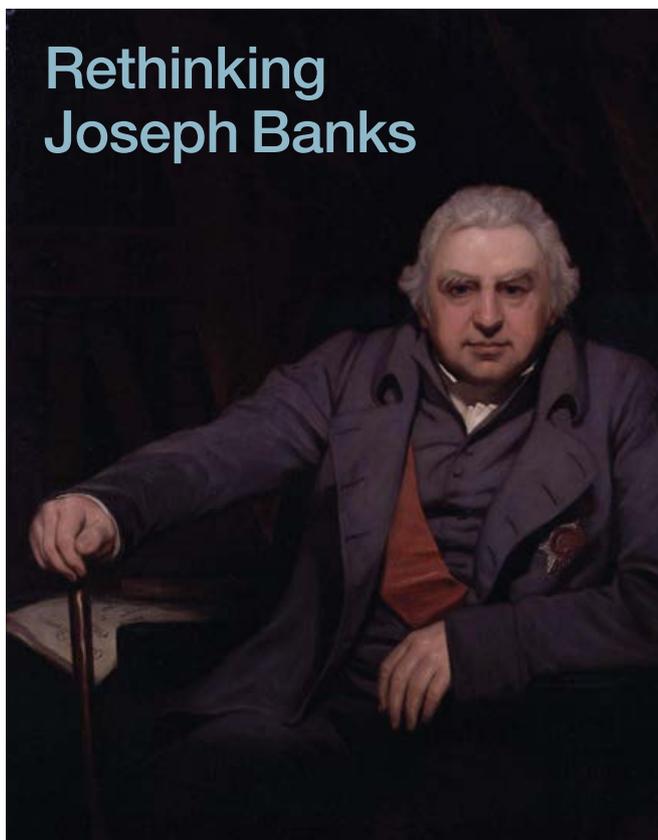
In December 2016 Professor Gregory gave a keynote paper on Anaximander, Cosmology and the Poets as part of the Ex Ionia Scientia, knowledge from the Ionians conference in Athens. This is part of his current research project attempting to trace some of the roots of Greek scientific thinking to a reaction to the world views of the early Greek poets such as Homer and Hesiod. In February Prof. Gregory organises the London Ancient Science

Conference, Monday Feb. 13th to Wednesday Feb. 15th at the Institute of Classical Studies. As part of the programme, Prof. Gregory will be giving his professorial inaugural lecture on the Monday evening. Further information can be found at: <http://www.ucl.ac.uk/sts/staff/gregory/lasc>

STS Speakers at the Biological Weapons Convention Review Conference

On 9 November 2016, STS's Professor Brian Balmer gave a talk at the UN Palais de

Nations, Geneva about the history of the British biological warfare research programme. The occasion was the Eighth Review Conference of the Biological Weapons Convention; the convention is an international treaty that bans the use of germ warfare. The five-yearly Review Conferences are the most significant events in the Biological Weapons Convention calendar and are attended by many of the 177 States Parties to the Convention as well as interested civil society organisations from across the world. Brian's talk was part of a lunch-time side-event organised jointly to showcase his AHRC funded research project on the History of the Biological Weapons Convention (see: <https://www.ucl.ac.uk/sts/staff/balmer/cbw/history-of-chemical-and-biological-weapons-programmes>) and to launch a new edited collection *Biological Threats in the Twenty-First Century* (to which Brian contributed a chapter). The event, attended by 40 people, was organised by Dr Filippa Lentzos from Kings College London (who is a UCL Human Sciences graduate), editor of the *Biological Threats in the Twenty-First Century*. The panel of speakers included Dr Cairiona McLeish, University of Sussex who is a UCL History & Philosophy of Science graduate.



Rethinking Joseph Banks

Sir Joseph Banks © Wikimedia

On November 10-11, 2016, UCL hosted a workshop funded by an AHRC Network Grant. Entitled *Rethinking Joseph Banks: New Directions for Research*, the meeting was arranged by Dr. Simon Werrett of the Department of Science and Technology Studies, on behalf of the organizing team, Nigel Rigby (National Maritime Museum), Lucy Peltz (National Portrait Gallery), Jordan Goodman (UCL) and Keith Moore (Royal Society). The workshop sought to assess the current state of research on Banks and to explore avenues for new research on Banks.

Sir Joseph Banks accompanied Captain James Cook as a naturalist on Cook's first voyage around the world in 1768 to 1771. In 1778 Banks was appointed President of the Royal Society and oversaw a global network of collaborators in the sciences until his death in 1820.

Speakers at the workshop considered Banks from the perspective of his class identity and relationships with Tahitians visiting Britain (Vanessa Smith, Sydney), connections between imperial geography and biography (David Lambert, Warwick) and as an agent of global exchange (Jordan Goodman, UCL). Participants brought perspectives from anthropology (Amiria Salmond, Auckland, considered material culture associated with Cook and Banks) and histories of collecting and the book (Edwin Rose, Cambridge). Presenters discussed how Banks learned critical skills as an estate manager (Janet Browne, Harvard) and explored his legacy in practices of collecting (Daniel Simpson, Royal Holloway) and in the colonial and political outcomes of British interventions in the Indo-Pacific region (Sujit Sivasundaram, Cambridge).

Participants also visited the Natural History Museum where the curators showed numerous items related to Banks from the collections. The workshop offered many insights into Banks and new avenues for research: a great start to a project that continues with another workshop at the National Portrait Gallery in January 2017.

Teaching Fellow arrivals



From left to right: Dr Richard Barnett, Mr Toby Friend, Dr Jean-Baptiste Gouyon, Dr Meritxell Ramirez-i-Ollé, Dr Melanie Smallman and Dr Billy Wheeler.

This year, STS has six teaching fellows contributing to our degree programmes. (We think this is a record).

Dr Melanie Smallman

Melanie is an academic, communications specialist, campaigner and policy adviser, interested in the relationship between science, technology and society. For eight years, until 2011, she was a communications adviser to the Chief Scientist in DEFRA, tasked with rebuilding public confidence in DEFRA's use of science. More recently Melanie was Deputy Director of the UK hub of the Responsible Research and Innovation (RRI) project, here in STS. Her research looks at the ways in which the public come to understand new and emerging science and technologies, and how they influence science policy. Melanie has taught STS modules in the past and will be a familiar face to many students. Find out more at: <https://melaniesmallman.wordpress.com>

Dr Billy Wheeler

Billy is currently head of Department for Philosophy and Religion at King Edward VI Grammar School, as well as a teaching fellow at STS. Billy is interested in studying traditional metaphysical problems from the viewpoint of computer science. Prior to this Billy was a PhD student at the University of Cambridge investigating the metaphysics of natural laws. Read more at: <http://ucl.academia.edu/BillyWheeler>

Dr Meritxell Ramirez-i-Ollé

Meritxell's academic interests are in the sociology of (scientific) knowledge and the study of people's common sense beliefs and practices. In her PhD research she carried out ethnographic research about a group of climate scientists with the purpose of contributing to a wider public understanding of the way scientists generate knowledge about climate change. Meritxell is returning to STS after a smashing success teaching HPSC modules last year. See more at: <http://chicons.academia.edu/MeritxellRamirezOlle>

Dr Richard Barnett

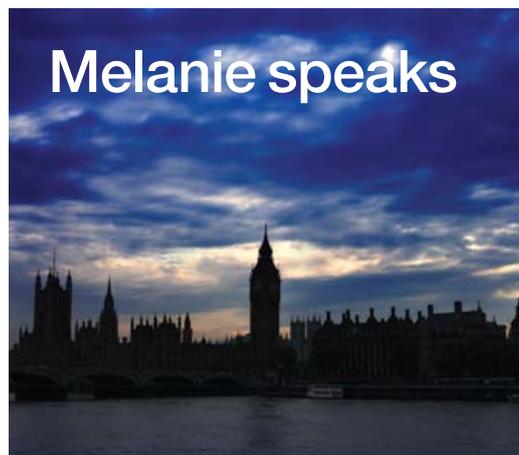
Richard describes himself as a writer, teacher and broadcaster, mostly on the cultural history of science and medicine, and a poet. His books include *Medical London*, and a BBC Radio 4 Book of the Week and international bestseller *The Sick Rose*. Find out more at: <https://richardbarnettwriter.com>

Mr Toby Friend

Currently a doctoral student in philosophy of science in STS, Toby researches the philosophy of laws of nature with a particular focus on the Humean tradition. See more at: <https://www.ucl.ac.uk/sts/students/Friend>

Dr Jean-Baptiste Gouyon

Also, we are delighted to have Jean-Baptiste continuing with STS for 2016-17. Jean-Baptiste continues to provide excellent teaching across his modules and read more about his research at: <http://ucl.academia.edu/JeanBaptisteGouyon>



Back in July 2016, the UK House of Commons Science and Technology Select Committee announced an enquiry into science communication. Given the department's significant expertise in this area, we took the opportunity to submit our collective views. Four months later, in November 2016, I found myself in the hot-seat, facing questioning by the MPs making up the committee. Questions ranged from what responsible research and innovation means for policymaking, to whether the government should regulate science communicators. For almost an hour I was grilled on almost every aspect of our work in STS, but thanks to the help that STS and UCL colleagues gave in the run up to the meeting, I was ready. It was a terrifying but thrilling experience, putting our work at the heart of government decision making. You can find out further information on: <http://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/parliament-2015/science-communication-inquiry-15-16>

The STS departmental communication team produced a report as part of the enquiry recommending that:

- In the future, research funding bodies (such as the ESRC) should fund a programme of research that specifically investigates the ongoing relationships between the public, science and technology. Alongside this, ensuring the continuation of the Public Attitudes to Science Survey is vital.
- Scientists need to be better trained to communicate their science, but also to understand the public's perspectives better and to reflect on their own values that are embedded in their research.
- There should be continued support for science communication practice to complement and support scientists' own efforts, as well as for the UK's network of science communication professionals.

Our full response can be found at:

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/science-communication/written/32510.pdf>

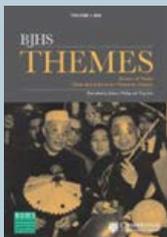


New editors

Dr Phyllis Illari has been appointed Co-Editor-in-Chief of the *European Journal for Philosophy of Science*. Alongside Dr Federica Russo, Dr Illari will be taking over from the founding editors Mauro Dorato and Carl Hoefer. Drs Illari and Russo have worked together on several projects, including their co-authored volume *Causality: Philosophical Theory Meets Scientific Practice* (OUP, 2014). Further details can be found on the website of the European Philosophy of Science Association (<http://philsci.eu/News/4385368>)



Starting with issue 4, **Simon Werrett** will be taking over as editor of *BJHS Themes* from Jon Agar, who has edited issues 1 to 3. Sister journal to the *British Journal for the History of Science*, *BJHS Themes* appears annually and aims to publish open access, high-quality, scholarly, engaging collections of history of science papers, each collection of which addresses a provocative theme. Anyone interested in putting together a proposal for a future issue should take a look at the *BJHS Themes* website: (<https://www.cambridge.org/core/journals/bjhs-themes/information/information-for-proposals>).



Public engagement activities at STS

Staff and students at STS continue to be busy conducting public engagements throughout the year. We are passionate about what we research and teach, so it is no surprise we like to shout about them.

Dr Jack Stilgoe continues to write for The Guardian newspaper, and you can see his articles at <https://www.theguardian.com/profile/jack-stilgoe>. In December 2016 Jack discussed 'Could the best way to make money from science be to give it away for free?'

Dr Carina Fearnley presented in the UCL Lunch Hour Lecture series a lecture titled 'Shake, rattle and roll: communicating lethal risks' in October 2016. The talk discusses the 2009 L'Aquila earthquake that sent a 'shockwave' through the research community, causing scientists to become increasingly concerned about what risk advice they communicate prior to a crisis. Carina addressed the question as to how do scientists make sense of data and share hazard information and how we can be savvier when it comes to fatal uncertainty? You see the lecture on the STS website at: <https://www.youtube.com/watch?v=WAJHFnx194>

Dr Chiara Ambrosio has appeared at many events throughout the year, including aiming to explain the connections between Art and Science to the masses at a 'Pint of Science' event in May. This was a collaboration with the Slade School of Art that was presented at the festival, which aims to deliver interesting and relevant talks on the latest science research in an accessible format to the public – all in the pub!

The Final Film Night at the Grant Museum

In July The Grant Museum held the last ever Film Night in association with Prof. Joe Cain. After nearly 10 years and 40 films, the final event was a showing of the 1959 classic *The Great Behemoth*. As usual, Prof. Cain began with a discussion of the merits (or otherwise) of the film, and a considerable effort was made in the presentation.

STS would like to thank The Grant Museum for their work over the last 10 years, and we look forward to seeing what comes next. For more information on the Film Night series, including a full list of all previous films, you can visit: <http://www.ucl.ac.uk/sts/staff/cain/film>

In 2016 thanks to the hard work of Malcolm Chalmers, our new Operations Administrator, the STS website got a significant facelift! Please check it out on www.ucl.ac.uk/sts alongside with new pages including recordings of our seminar series, and a whole series of Podcasts. We would appreciate any comments you have, so please take a look.

During 2016 STS has also taken steps to build up their social media profile. You can now follow us on the below different formats:

- Twitter: <https://twitter.com/stsucl> handle @stsucl
- Facebook: <https://www.facebook.com/STSUCL> or search STSUCL
- YouTube: <https://www.youtube.com/user/STSUCL>

STS also continues to maintain its own blog – The STS Observatory – featuring interesting viewpoints from our various members of staff. Please see more at: <https://www.ucl.ac.uk/sts/research/public-engagement-in-sts>

BOOKSHELF

Experiment earth: Responsible innovation in geoengineering

Hot on the STS bookshelf is the latest publication by Dr Jack Stilgoe titled *Experiment earth: Responsible innovation in geoengineering*. Published by Routledge this book looks at experiments in geoengineering – intentionally manipulating the Earth’s climate to reduce global warming – that have become the focus of a vital debate about responsible science and innovation. Drawing on three years of sociological research working with scientists on one of the world’s first major geoengineering projects, this book examines the politics of experimentation. Geoengineering provides a test case for rethinking the responsibilities of scientists and asking how science can take better care of the futures that it helps bring about.

Anaximander: A Re-assessment

Professor Andrew Gregory has published his work on Pre-Socratic Greek Science, titled: *Anaximander: A Re-assessment*. Anaximander, the sixth-century BCE philosopher of Miletus, is often credited as being the instigator of both science and philosophy. The first recorded philosopher to posit the idea of the boundless cosmos, he was also the first to attempt to explain the origins of the world and humankind in rational terms. Anaximander’s philosophy encompasses theories of justice, cosmogony, geometry, cosmology, zoology and meteorology.

Anaximander: A Re-assessment draws together these wide-ranging threads into a single, coherent picture of the man, his worldview and his legacy to the history of thought. Arguing that Anaximander’s statements are both apodeictic and based on observation of the world around him, Andrew Gregory examines how Anaximander’s theories can all be construed in such a way that they are consistent with and supportive of each other. This includes the tenet that the philosophical elements of Anaximander’s thought (his account of the apeiron, the extant fragment) can be harmonised to support his views on the natural world. The work further explores how these theories relate to early Greek thought and in particular conceptions of theology and meteorology in Hesiod and Homer.

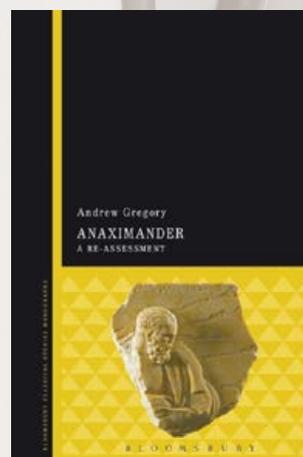
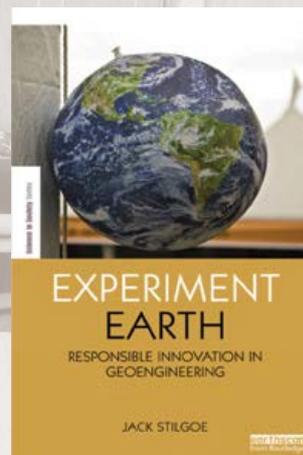
STS Occasional Papers

STS publishes its Occasional Papers to disseminate current research undertaken by our staff and affiliated scholars. The aim is to inform, investigate, and provoke. The series covers the whole of our diverse field: history, philosophy and sociology of science, science policy, and public engagement of science. In 2016 we added a further two papers:

Horst, Maja. 2016. *Reframing Science Communication: Culture, Identity, and Organisations* (pdf) (London: UCL Department of Science and Technology Studies).

Longino, Helen. 2016. *Underdetermination: A Dirty Little Secret* (pdf) (London: UCL Department of Science and Technology Studies).

Please see more at: <https://www.ucl.ac.uk/sts/research/op>



**‘ANAXIMANDER:
A RE-ASSESSMENT
DRAWS TOGETHER THESE
WIDE-RANGING THREADS
INTO A SINGLE, COHERENT
PICTURE OF THE MAN,
HIS WORLDVIEW AND HIS
LEGACY TO THE HISTORY
OF THOUGHT.’**

Research projects



The Responsible Research and Innovation (RRI) Toolkit

RRI Tools – glorious finish and invitation

After three busy years, the EU funded project ‘Responsible Research and Innovation Tools’ finished in December 2016. The aim of the project was to develop a Toolkit on Responsible Research and Innovation (RRI), comprised of inspiring practices, projects and digital tools aimed at raising awareness, training, disseminating and implementing RRI.

The Toolkit is both targeted at, and designed by, the key stakeholders in Research and Innovation (RI), including policy-makers, researchers, civil society, industry and science education – and yourselves.

RRI Tools’ 19 Hubs, covering 26 countries across Europe, have been responsible for working on the definition of RRI, and exploring its opportunities and just what is needed for dealing with any obstacles, for creating the Toolkit itself and training on how to use it, and for disseminating the concept of RRI to as wide an audience as possible.

In particular, the Responsible Research and Innovation Tools project:

- Held 27 consultation workshops in 30 countries to identify opportunities, obstacles and solutions for the implementation of RRI

- Developed a toolkit with + 450 Tools, containing inspiring practices, projects and background material that will help you better understand the concept of RRI and implement it in your own organisation or practices <http://www.rri-tools.eu>
- Trained +3000 trainees in more than 90 training events all over Europe. The 19 hubs have facilitated these training events and have furthermore held +200 dissemination events and +100 advocacy meetings
- Built a Community of Practice of over 1000 members and over 5000 followers on social media

If you have not already done so, please do register as part of the RRI Tools community. The Toolkit/website we have created – www.rri-tools.eu – is guaranteed to be maintained at least until the end of 2018 and, if further funding can be found, beyond that. Melanie Smallman (m.smallman@ucl.ac.uk) and Jack Stilgoe (j.stilgoe@ucl.ac.uk) will remain as the go-to people for RRI here at UCL.

‘RRI TOOLS’ 19 HUBS, COVERING 26 COUNTRIES ACROSS EUROPE, HAVE BEEN RESPONSIBLE FOR WORKING ON THE DEFINITION OF RRI, AND EXPLORING ITS OPPORTUNITIES AND JUST WHAT IS NEEDED FOR DEALING WITH ANY OBSTACLES, FOR CREATING THE TOOLKIT ITSELF AND TRAINING ON HOW TO USE IT, AND FOR DISSEMINATING THE CONCEPT OF RRI TO AS WIDE AN AUDIENCE AS POSSIBLE.’



Brendan Clarke in the EBM+ video

STS’s First EBM+ Video

EBM+ is a consortium partly funded by AHRC and UCL whose members are keen to develop the methods of evidence-based medicine to handle evidence of mechanisms in addition to evidence of associations. In 2016 the consortium which includes Brendan Clarke and Phyllis Illari from STS launched the first of our three EBM+ videos, *Why EBM Needs Mechanisms*. Starring Dr. Brendan Clarke, this video discusses the limitations of clinical trials and why EBM needs evidence of mechanisms.

Please see more about the project on: <http://ebmplus.org/>

VOLCANIC ACTION

VOLCANOES AS A FORCE FOR CHANGE: CITIES ON VOLCANOES CONFERENCE IN CHILE

AFTER AN AMAZING CITIES ON VOLCANOES 8 CONFERENCE IN JOGJAKARTA, INDONESIA, HUNDREDS OF VOLCANOLOGISTS, SOCIAL SCIENTISTS, AND DISASTER PRACTITIONERS LISTENED IN ANTICIPATION AS TO WHERE THE NEXT CITIES ON VOLCANOES CONFERENCE WOULD BE HELD REPORTS **DR CARINA FEARNLEY**.

INDONESIA HAD SET THE BAR HIGH; we had gained insights into how the Indonesians live with volcanoes throughout their land, from the rural to megacities, from the largest supervolcanoes in the world, to nearly daily volcanic activity. This was the mecca for volcanologists: what could beat it? 'Chile' it was announced, and we were over the moon! Chile has only recently been explored by volcano scholars around the world, which is astonishing given the number, size, and extent of volcanoes across Chile. Certainly you may remember the unusual and spectacular eruption of Chaitén in 2008, or perhaps the eruption of Calbuco in 2015 that caused chaos with aviation in the southern hemisphere? At last I was going to make it there.

Two years later, my trip to Chile started off with visits to friends and the stunning Atacama Desert in North Chile. It was here that I learnt how volcanoes have shaped the land, people, and spirit of people living across Chile for 1000s of years, at last seeing the volcanoes in the textbooks I had been teaching from for years. Here ancient cities were built from rare volcanic rocks, and their looming presence at the base of the Andes provided a strong sense of connection with nature despite being the driest place in the world. The conference formally began with a pre-conference fieldtrip to Chaitén, in Northern Patagonia. I had no idea how amazing this trip was going to be, although being trapped with 30 odd volcanologists in a remote part of the world usually results in good hiking, great adventures, passionate conversations, and plenty of time to socialise (otherwise known as party). The people living in and around the town of Chaitén believed Chaitén volcano to be inactive. Yet, in 2008 they started to experience significant earthquake activity, which the local authorities

stated was due to unrest from general tectonic and subduction activity. This was not an unreasonable assumption given that Chile is one of the most seismically active places in the world. However, the local populations felt this unrest was different, not like anything they had experienced before. On May 2nd, 2008 a volcano erupted. I say a volcano because at the time people felt it was the nearby volcano Michinmahuida, partly because Chaitén volcano had not erupted in 9,500 years (well that's what many scientists thought at the time). Although the population of 4,200 was evacuated that day by the Chilean government, the main explosive activity was over by the 3rd May. During our visit to Chaitén we not only got to climb and see the amazing volcano that is still steaming away, we also had the most amazing opportunity to meet with the local populations who told us their experiences of evacuating on that fateful day. Many thought they would be returning home within a couple of weeks. It would not be until two years later that some of the population



Carina Fearnley at the base of the 600m high hike up to Chaitén volcano, which erupted on the 2nd May 2008. Image © Dr Carina Fearnley



returned to Chaitén, to find their homes and town buried in ash, but surprisingly split into two by the river Yelcho that carried so much debris it diverted, using the road as a more direct route to the sea. What was once an open harbour had become a delta. Returning home took grit. Imagine seeing your hometown in colours of black, white and grey, with no electricity or fresh water. The Government did not want people to return to the town, but instead to relocate to a new town nearby. It soon became apparent that people did not want to build a new Chaitén, but wanted to bring the place they had grown up in back to life. As we listened to different locals recount how they rebuilt their life in Chaitén, or in new locations, the heartfelt distress they had felt, and the loss, became clear. Thankfully, due to the will of the local population, Chaitén was eventually given government support, and Chile learnt many valuable lessons. First, they needed to monitor and observe volcanoes to provide warnings, and second, they needed to set up a government organisation to liaise and work with vulnerable communities to help reduce loss of life, and minimise social, economic and cultural



‘BACK IN PUERTO VARES, IN THE LAKE DISTRICT AREA OF CHILE THE CONFERENCE TOOK PLACE OVER A JAW-DROPPINGLY GORGEOUS LANDSCAPE.’

The magnificent view over Petrohue Falls towards Osorno Volcano in Vicente Pérez Rosales National Park, Chile. Image © Dr Carina Fearnley

impact. The eruption of Chaitén changed the face of Chile and its attitude towards natural hazards.

Back in Puerto Vares, in the Lake District area of Chile, the conference took place over a jaw-droppingly gorgeous landscape. It’s a good job the conference sessions were so brilliant as I’m sure everyone could have sat and watched the three volcanoes around the lake change colour as the sun passed over for days on end. It was during this conference that I held the first international workshop on Volcano Alert Level Systems (VALS) titled ‘Understanding communication products and protocols: volcano alert level systems’. This workshop brought together volcano observatories from around the world to discuss their VALS, why they were designed the way they are, and whether these systems provide forecasts anticipating volcanic unrest, or as responsive once an event has happened, or working with a permanent system in place to manage the volcanic crisis (e.g. a lava damn. Some use numbers, others use colours, others are quantitatively or qualitatively assigned. This workshop was the first in a series

developed by the World Organisation of Volcano Observatories Working Group on VALS, led by Dr Annie Winson (Aberystwyth University) and Dr Sally Potter (GNS) and myself. It was a super busy week, where I presented two talks, co-convoked two sessions, one on VALS, and the other on ‘Using arts for volcano risk communication’.

Despite numerous poster sessions, talks, ceremonies, working groups, film nights, a gig by Inti Illimai, and the inter-conference fieldtrip, there was one astonishingly striking thing about the conference. I attended my first Cities on Volcanoes in Unzen, Japan in 2007 as a new PhD student, eager to make a difference. A large proportion of the presentations focused only on volcanological sciences; only part of the story when focussing on how cities cope with volcanic activity. In just under ten years the Cities on Volcanoes conferences had shifted the goalposts. Chile was the first such conference that was truly interdisciplinary, engaging with anyone from any background who was interested in the coming together of an uncertain, ambiguous science dominated

by the unsolved epistemic uncertainties, and that of society and the varying cultural, political, economic, and legal context in which these volcanoes punctuate. We were all on the same page, and we were all excited. Active scholar and practitioners, from undergraduates to leaders in their field embraced the interdisciplinarity that volcanoes force us to have, and we really listened to one another. This was a paradigm change in the making and I feel honoured to be part of it. With growing insights coming from STS to social volcanology as it is now frequently called, these conferences can teach a lot to STS and the world about how we can better understand, communicate, and manage complex risk, and develop better policies that make a difference. Chile was not only beautiful, full of great stories and new friends, it was also the most fulfilling moment of my career to date. Kuhn, eat your heart out!

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STS Seminars

STS hold a series of public seminars each year, to discuss topics we feel are of significance. These seminars are recorded, and can be on our departmental YouTube channel for all to enjoy. This academic year we have had a super STS seminar series, and we are still only half way through! Here's what you missed and what's coming up:

2016 TERM 1

- Doug Millard from The Science Museum London spoke on *Spacecraft as Samovars: the making of the Cosmonauts exhibition*.
- Dr Billy Wheeler from STS spoke on *The Epistemological and Legal Status of Robot Testimony*.
- Dr Roland Jackson from Sciencewise discussed *Scientific advice to Government in the mid-nineteenth century: the case of John Tyndal*.
- Prof Sharon Ruston from Lancaster University explored the *Humphry Davy and the Safety Lamp Priority Dispute*.
- Dr Patricia Fara from Cambridge University gave an insightful presentation on *Voting For Science: Women At Work in World War One*.
- Dr Melanie Smallman from STS spoke on *Science, the public and post-truth politics*

Term 2 has an equally exciting agenda including the below – so please put the dates in the diary and all are welcome. Updates will be on our webpage: <https://www.ucl.ac.uk/sts/research/sts-seminars>

11/01/2017

Dr Lara Marks from STS on *History on-line: The case of monoclonal antibodies*

18/01/2017

Prof Deborah Dixon from University of Glasgow on *Feminist Geopolitics and the Issue of the Wound*

1/02/2017

Prof Peter Bowler from Queen's University, Belfast on *Prophets of Progress? Predicting the Future of Science and Technology from H. G. Wells to Isaac Asimov*

8/02/2017

Dr Maurizio Meloni from the University of Sheffield on *The Politics of Nature-Nurture: What it was, how it is changing*

1/03/2017

Prof Paul Hoyningen-Huene Leibniz Universität Hannover, and Universität Zürich on *Strong Incommensurability and Deeply Opaque Ignorance*

8/03/2017

Prof Nik Brown from the University of York on *Resistance and immunity: Economic imaginaries and the politics of fear in AMR*

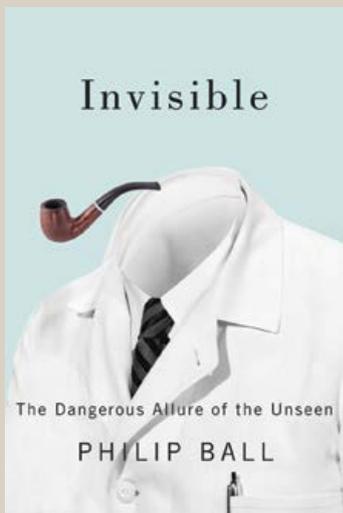
'The goal of social robotics is to have humanoid robots one day communicating and collaborating with humans in normal everyday environments. Humans are already epistemically dependent on a vast array of machines (the internet, smart phones, calculators, GPS) and this is only likely to grow with the introduction of truly social robots. But should the knowledge gained through the 'say-so' of a machine be classed as 'testimonial knowledge' or 'instrumental knowledge'? How we answer this question suggests important ramifications for large portions of philosophy and society. I argue that some robots are capable of providing epistemic testimony and discuss the consequences of this for one area in society: namely, the criminal justice system.'

Dr Billy Wheeler

The Epistemological and Legal Status of Robot Testimony.

Departmental news

STS ONE BOOK EVENTS 2017



Each year, the Department asks all staff and students to read one book in common, and this book is the subject of activities during the year. This year's STS OneBook selection is Philip Ball's 2015. *Invisible: The History of the Unseen from Plato to Particle Physics* (London: Vintage). The goals of our OneBook programme are to increase intellectual integration across disparate courses; to increase common ground for students in different year groups and to encourage informal learning.

This year's OneBook events are a public lecture given by Philip Ball (on Thursday 23 February, 6–8pm in the Roberts Building G08 Sir David Davies LT) and a common reading session on Wednesday 18 January, 12–1pm organised by the four reading groups – SASsy (Science and Society); History of Science; Philosophy of Science; FemSTS (gender issues in STS).



'We Want You to Live'

Film director Carl Gierstorfer spent a day at the department in November 2016. In the afternoon, he ran a workshop with students interested in Science and film-making, on the theme *Storytelling, Science and Filmmaking*.

In the evening, Gierstorfer presented *We Want You to Live* his last documentary which explores the impact of the 2014 Ebola outbreak in Liberia on the Liberian society.

In his workshop with the students, Gierstorfer gave a talk on his trajectory and insisted on the importance of storytelling to convey complex issues. Participants working in groups of three had to produce a 5 minute trailer for a hypothetical documentary before the workshop. On the day, each trailer was seen, pitched, and then discussed with Gierstorfer and the other participants. Kate Balding, a 3rd year HPS student, said: "the workshop was absolutely great – interesting, engaging, informative and just an enjoyable environment to bounce ideas around in. I came away very enthused (Carl was utterly fab) and who knows maybe I'm converted to the creation of documentaries and not just the study of them!". Emerald Joyce, another 3rd year HPS student added: "I got a really interesting insight into the life of a documentary maker, I never thought about how the

documentary maker could be affecting the lives of the people being filmed".

The idea for Gierstorfer's visit came as I attended the ethnografilm festival in Paris in April 2016, which is intended to promote film as a tool for ethnographical research. *We Want You to Live* explores the impact of the Ebola outbreak on the very fabric of the Liberian society. It demonstrates very well how Ebola is much more than an infectious disease, and documents the work Liberians had to conduct to integrate this infectious agent, and defeat it. For instance, Ebola meant rethinking how the dead are cared for, a foundation of culture. Overall the documentary shows how the Liberian society appropriated the disease and became an actor in the fight against it, finding solutions which were adapted to the Liberian context. As Gierstorfer's documentary demonstrates, film can be used to study the relationship between science and society. This is why STS, as a department, is interested in it.

Jean-Baptiste Gouyon

Departmental news



Professor Ludmilla Jordanova

Haldane Lectures 2017

STS launched the Haldane Lectures in 2014 in honour of UCL Professor JBS Haldane, a polymath not only in the life sciences but also in science communication and science policy. We hold two Haldane Lectures each year, one in History and Philosophy of Science; another, in Science and Society. We aim to bring the most exciting scholars in our field to UCL to talk to us and to work with our students.

In 2017, the Haldane lecturers will be Professor Ludmilla Jordanova and Professor Trevor Pinch.

Ludmilla, a renowned and influential historian, will be speaking on the subject of *Institutions, Identities and Historical Practices in Science and Medicine*, on 30 March 2017.

Trevor is a pioneer sociologist of science who has recently been working on 'sonic studies' on sound, technology and society. His lecture will be on 22 May 2017.

Keep an eye on the STS website for more details nearer the date. All are welcome.



STS Common Room

Thanks to a recent donation, the STS common room now features new armchairs! With a small reshuffle we hope students will enjoy more working space in the common room this year.



The UCL Induction and Development Programme for Teaching Administrators (InEDITA), is a collaboration between Lori Coletti Campbell, Departmental Manager for STS, Stefanie Anyadi, Teaching and Learning Manager for Psychology and Language Sciences, and Leigh Kilpert, Teaching and Learning Manager at the Institute of Child Health.

The programme provides training, development and networking opportunities for teaching administrators in a range of formats:

- Short workshops relating to personal effectiveness offered by HR
- Arena Open strand for teaching support staff
- Courses and workshops offered by ISD and other central services
- Diagnostic tools to identify gaps in safe levels of working and use of best practice
- Booklets to provide an overview of 'big issues', produced in collaboration with the Office of the VP Education and Student Affairs.
- Mentors to support new colleagues to be arranged via the Teaching Administrator network

Lori and her team are revolutionising and enhancing teaching administration across UCL and STS is delighted to be supporting the initiative. Key aims include:

- Excellent and consistent student experience across UCL by ensuring that teaching administrators are aware of their role in continuously improving the student experience and student outcomes, and have the knowledge, tools and mindset to contribute in these areas.

- Best practice in teaching, assessment and teaching administration is shared across departments and well supported .
- Teaching administrators contribute to developing best practice through an awareness of key UCL strategies and the wider picture, and by acting as reflective practitioners.
- Effective working and job satisfaction by enabling new and experienced teaching administrators to contribute to and integrate into an active community of practice.
- Quick integration of new staff by providing reliable, comprehensive induction material in different formats for the wide range of tasks with which teaching administrators are involved and by providing line managers with a customisable programme to support new staff in their department.
- Compliance with key legal and institutional requirements.
- Identifying areas of further staff development requirements.
- Generic resources will be re-usable/ re-purposable for other staff groups.
- Rolling of the initiative out for other professional services groups within UCL and beyond.



BSc

SCIENCE AND SOCIETY (UCAS U80 L391)

HISTORY AND PHILOSOPHY OF SCIENCE (UCAS U80 V550)

MSc/PGDIP/PGCERT

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