

UCL INTERACTION CENTRE
DIVISION OF PSYCHOLOGY AND LANGUAGE SCIENCES
AND DEPARTMENT OF COMPUTER SCIENCE



UCL



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From Ergonomics to UCLIC – my journey as a Master’s student to its director

I began my life at UCL when first studying the then called MSc in Ergonomics in the early 80s. It opened my eyes to the value of studying many different subjects rather than only delving deeply into one. Every day, we traipsed to a different London college to study the various contributions to Ergonomics; for example, studying lighting at the Bartlett, physiology at Chelsea College, biomechanics at the Royal Free and Cognitive Psychology at Birkbeck College. Being exposed to so many different areas and cultures (‘old school’ Birkbeck was quite different from ‘new medical school’ Royal Free) could be overwhelming at times. But it paved the way for new insights, instilling in me why and how multidisciplinary is central to HCI and Ergonomics when trying to frame questions and generate new ideas in the context of understanding the relationship between people and technology. I was also able to study a few subjects in more depth, such as cognitive psychology and organizational psychology. This enabled me to explore more theory, learn how to model users and conduct experiments to investigate the usability of user interfaces.

What has stuck with me most from my time on the old Ergonomics Master’s degree are my fond memories of the many visits we went on as part of the course to industrial places, such as Wall’s factory (where they make sausages), a now extinct coalmine in the Midlands and a control centre in the London Underground. We learnt so much more about real people, work and machinery than you could ever put across in a lecture.

After obtaining my Master’s degree I became increasingly interested in technology, interfaces and interaction design. I knew I wanted to continue studying after completing the course.



I got a job as a research demonstrator and begun my PhD in earnest, investigating the cognitive, semiotic and aesthetic properties of graphical representations, with a particular focus on iconic interfaces. It was exciting to be at the start of a new zeitgeist. I was inspired to think about future interfaces – having battled for so long with command-based interfaces. The field of Human-Computer Interaction (HCI) came into its fore and I became part of that movement, exploring how to augment and extend a diversity of human experiences with new technologies. While I continued to have an interest in Ergonomics, for me, the action and excitement was now in HCI.

In September 2011, I took up the directorship of UCLIC, following in [Professor Ann Blandford](#)’s footsteps. She had done an excellent job during the previous 6 years overseeing the [HCI and Ergonomics Master’s course](#), keeping it

up-to-date, while expanding it to match the changes taking place in the field. UCLIC has grown and changed considerably since it was the old Ergonomics Unit. In the beginning there were about 15 students each year on the course. Now, there are between 30–50 students per year from all over the world. I am always amazed at the backgrounds, skills and previous experiences of our students. This includes music, media, philosophy, computer science, languages, psychology and history of art. It makes for an eclectic and vibey mix.

There is a world of difference when looking back between my time on the course and the current course. For one, the student experience is very different. The course is more integrated in what and how it teaches the different strands of HCI and Ergonomics. Technology is central to everything, from the way we teach, what we teach and how the students learn. Many of the modules are more practice-based.

The Intel Collaborative Research Institute (ICRI)



The **Intel Collaborative Research Institute for Sustainable Connected Cities** was launched in the autumn of 2012 between Intel, UCL and Imperial College. Its vision is to enhance the social, economic and environmental well-being of cities. A main goal has been to rethink the relationship between individuals, communities, businesses, public employees and the city in which they live and work in a way that makes citizens happier, more productive and more efficient in the consumption of limited resources.

The research agenda focuses on four central themes:

City as a Platform

Working with the scaled adaptive systems necessary for the urban environments of the future

Harnessing the Invisible City

Visualising and optimizing the invisible and forgotten resources and data flows of the city for informed decision-making

Enabling Connected Communities

Exploring how technology can enhance communities in relation to their sense of identity, well-being, health and place

Sustaining Sustainable Practices

Improving urban resource management through technology interventions and the science of behavioral change

Recently, we developed the 'London Living Labs'. What do we mean by this? In a nutshell: a diversity of real world settings in London where we test and observe our technology interventions that we have designed and deployed with the communities who reside or use them. These include urban sites, such as schools, parks, streets and inner-city neighbourhoods. For example, we have deployed in Hyde Park an experimental platform to support, manage and evaluate the efficacy of data from a range of fixed, mobile and participatory sensors, including citizen-generated contributions. To achieve this, we have worked with the Royal Parks, who are interested in collecting continuous data streams over several seasons. These can provide them and us with new opportunities for data mining and creating data visualizations of ecology, air and water quality, noise and light pollution, and public engagement. In turn, they enable us together to explore a range of grounded ways to change community behaviour. Participatory design in the wild!

A benefit of the urban Living Labs approach is the ability to scale up, reuse and generalize experiences, designs and platforms across the different parts of London and other cities.

Yvonne Rogers and **Licia Capra** are managing the UCL team. We also have seven PhD students and four research associates together with a number of visitors who have come from all over the world.

For more information see:

www.cities.io

Squeezy Balls – a playful intervention to facilitate positive social interactions at work

Cities are full of large office buildings. Workers spend large amounts of time within these physically constrained spaces, often without talking to each other, not even for a polite greeting. Feelings of discontent and social isolation can often emerge. A prime example is the building we are located in at UCL which comprises 8 floors of offices, labs, long empty corridors and closed doors. While UCLIC and the ICRI are a hive of social activity, located in open plan spaces with mainly glass-fronted offices for faculty, the same does not hold for the rest of the building. We may visit the 5th floor occasionally for a meeting or the 6th floor to run a study but rarely go to another floor to see what is happening or to see who is around. You just don't climb the stairs in the off chance of bumping into someone. As a result, the building is largely a series of horizontal spaces where people rarely connect with one another on the different floors. A two-storey building may just about work; but a building with more floors (in our case 8) can often lead to a silo mentality. As a result, there is a general perception in the building that people don't know most of the other people in the same building.

We were interested in exploring whether a distributed technological intervention, based on the principles of playfulness, ambiguity and intrigue, could reverse this trend. Using a combination of physical computing and interactive visualisations we created a novel installation that was intended to make people stop, think and discuss what they felt about it and the issues it raised. In other words, an alternative digital water cooler – one that was playful and fun. We designed an input device – the Squeezy Box – that was placed outside the lift/stairwells of most of the floors. Each one consisted of a row of different coloured mood balls that afforded squeezing. Above them was a tantalizing poster that simply said 'squeeze the colour of your mood'.



Would the inhabitants of and visitors to the building take heed? And, if so, what would they think? Moreover, would they think where do the squeezes end up? A digital floor visualisation on the 6th floor was repurposed (from the interactive floor display featured in the last newsletter) as the output: the aggregated squeezes of each colour were displayed for each floor outside one of the lifts as a large matrix of brightly coloured LED lights. The idea was that this would encourage people to come and look at the output and compare what each floor was squeezing and in doing so encourage people to move from other floors to visit. There would be a reason now for them stopping by at a different floor.



So what happened? After a one-month long deployment, it was found that this playful and lightweight intervention impacted on the workplace environment at several levels. Firstly, it provided the opportunity for personal reflection – many people had not thought about what mood they were in. This provided them with a new awareness – why did they feel they were having a yellow or a blue mood? Secondly, it provided an opportunity to appropriate and take ownership of it within the building so it became part of the fabric; for example, rules of use and games developed around the installations. Thirdly, it impacted on an interpersonal level by providing interesting conversational content for social interactions between colleagues. There were many occasions where Squeezy Balls facilitated new connections between people who had not spoken to each other before as well as strengthening existing connections between colleagues. A sense of pride and positivity was also reported – although a few professors thought it was 'silly' and beneath them to squeeze if someone else was around (some were observed moving towards a squeeze box only to swerve away when someone else came round the corner).

The installation has attracted considerable attention from a number of visitors. Moreover, several other organisations and councils in London, have identified their own work buildings and housing as being socially problematic and see the potential of adapting the Squeezy Balls installation for them, as a way of injecting some social playfulness and new sociality to see whether it improves them. We plan to follow up on these and see how what they do in other contexts. For us, it is a great impact story, demonstrating how our exploratory research can be taken up by others who, likewise, can see its value in their world.

A Day in the Interaction Research Lab

Reproduced from ACM Interactions magazine (dl.acm.org/citation.cfm?id=2533768&dl=ACM&coll=DL)

How do you describe your lab to visitors?

The University College London Interaction Centre (UCLIC, pronounced “you- click”) is an interdisciplinary research and teaching institute situated in the heart of London in Bloomsbury. University College London (UCL) was founded in 1826 and is home to some 10,000 staff and almost 25,000 students, and was recently ranked fourth in the QS world university rankings. UCLIC sits between the **Department of Computer Science** and the **Psychology and Language Sciences Division**. Our main space is located on the top floor of the computer science building, where we are treated to beautiful views over London. Additionally, we have an interaction research lab/studio and usability labs.

We also run an internationally renowned **Master’s course in Human-Computer Interaction and Ergonomics**, where students from a wide variety of backgrounds and from all over the world come together to learn about HCI, user experience and design, ergonomics, and cognitive science.

What is a unique feature of your lab?

We have been in existence for a very long time, beginning more than 35 years ago in the form of the Ergonomics Unit, and now as a growing, inter- nationally renowned HCI centre. We have a strong tradition in cognitive psychology, ergonomics, and computer science, but recently, with the arrival of **Prof. Yvonne Rogers** as director, together with **Dr Paul Marshall** and **Dr Nic Marquardt**, we have moved increasingly into design, social aspects of HCI, and physical computing. We have strong collaborative links across UCL and

other universities, with local hospitals and other partners in industry (e.g., Microsoft, Google, Intel, Cisco). We also share a new space where 80 researchers from UCL and the BBC are collaborating on various future technology and UX projects. In addition, we are part of the new Intel Collaborative Research Institute (ICRI) for Sustainable and Connected Cities. We have been moving our research more into the wild and have been using our building as a test bed. Our projects and installations in the building change frequently, so visitors coming to our lab can always expect to see something different. We also have access to the new **Institute of Making** that is a cross-disciplinary research club for those interested in “the made world: from makers of molecules to makers of buildings, synthetic skin to spacecraft, soup to diamonds, socks to cities.”

How many people are in the lab, and what is the mix of backgrounds and roles?

There are more than 40 people in our lab, and it is continuing to grow — 11 faculty, 12 post-doc and research associates/fellows, and around 20 Ph.D. research students. People in our lab come from a wide variety of backgrounds, including psychology, computer science, design, social sciences, engineering, ergonomics, media, and industry. Each year, UCLIC also houses about 50 master’s students.

Briefly describe a day in the life of your lab. Every day is different. Some days we are very loud and busy, with everybody working toward a deadline (the recent CHI papers submission saw a record number of us frantically submitting papers just before the 1am deadline, local time); other

days are considerably quieter.

Being in the heart of London, we get many visitors passing through our lab, which is fantastic for networking at work and afterward. Right now we have visiting researchers from Korea, Mexico, and Europe. We also get visitors from North America, Japan, Australia, and Europe who drop in on their way to conferences in other parts of the world. We try to give them an opportunity to present their work and be subjected to UCLIC’s special style of feedback and audience participation.



What is the one feature of your lab you would not do without?

The heart of our lab is the “fishbowl.” It is a social space located in our main open-plan office, surrounded by glass, enabling people to see both in and out. It is a hive of activity, and where all the gossip, lab photos, etc. can be found. Members of the lab, staff and students alike, congregate for lunch, brown-bag meetings, and other discussions. We also have a tradition of bringing cakes in for birthdays and sweets/candy from our trips abroad. As the lab grows, we’re eating a lot more cake, and more unusual and exotic sweets are appearing every week!

Errordiary – a public engagement innovation

If you've recently made an error, or have created a clever resilience strategy to prevent one, then share it on **Errordiary!** www.errordiary.org is a public engagement website that has three main parts:

1. **A human error stream**
where people share the errors that they make and come across on a daily basis.
2. **A resilience strategies stream**
where people share the resilience strategies that they create and come across on a daily basis.
3. **A 'Discovery Zone'**
that contains stories, videos, photos, research, teaching materials, games, news clippings, competition and a discussion forum around the topic of error and resilience.

You can share errors and avoidance strategies on Errordiary through Twitter (using [#errordiary](#) or [#rsdiary](#)) or directly through the website. Since 2009 we have accumulated over 2,000 errors and over 300 resilience strategies.

Errordiary brings public engagement, research and teaching about human error closer together. In terms of public engagement we recently ran a project that attracted an extra 6,000 visitors to the site as well as holding a tweetchat for people with diabetes and given talks to medical professionals. **In terms of research**, we have published on making resilience strategies more tangible and developing the idea of a MOOD (Massively Open Online Diary) for citizen science.



In terms of teaching, we use the data to teach students about human error categorisation schemes and are informed that it is starting to be used for similar purposes at other universities in the UK and abroad. Further information can be found in the Discovery Zone.

Human error is a central theme for HCI and Ergonomics that has the ability to engage a broad audience. We strongly believe that we should learn from error rather than trying to hide it, that errors are not always the fault of the individual, and that system changes can be made to reduce the likelihood of error in the long term for everyone. Stopping at human error usually satisfies the need for blame and to find a scapegoat, but it masks the

interesting factors that have contributed to the error along the way – including design (e.g. see [Microwave Racing](#)).

We're aiming to develop a community around Errordiary – please have a look at the site, register and contribute. Get in touch with [Dom Furniss](#) if you have any comments or queries.

In parallel, we're also running a [Games Design Competition](#) to produce a game that can raise awareness of the blame culture around human error and get players to reflect on how individuals are blamed even when the wider system is at fault. If you have any questions about the competition, please email the competition chair, [Dr Jo Iacovides](#).