

UCL TRANSPORT
INSTITUTE



UCL

Annual+ Report
2017-18

Personal Message from the Director

This is our year and a half report, covering 2017 and the first half of 2018. We are timing the report this way because in 2017 we formed a high-level advisory board. The board first met in June 2017 and has been helping us develop our vision and mission (overleaf). From these we've set a work plan that we have begun implementing during late 2017 and 2018.

With the identification of our unique selling proposition (overleaf), we have also taken on wider-reaching projects that make use of our convening power and our leadership position at the centre of the UCL-wide research network. For example we undertook a white paper on the UK's landscape for transport research after hearing a number of researchers express concerns. We also won a grant to develop a stronger and more coherent cross-cutting partnership with Transport for London, again based on conversations with colleagues across UCL.

The TI has continued its work on developing cross-cutting research that brings together academics from different disciplines and groups around UCL. Areas

that we've been looking at this year include transport at night, road safety, non-communicable diseases and green infrastructure.

Given the rapid pace of technological change in the transport sector, combined with the government and UKRI focus on the Industrial Strategy, the Transport Institute has added a ring to our Theme diagram (at right), for 'Technology and Innovation.'

To help position the UCL transport network in the new industrial strategy landscape, we also began developing several interwoven new areas. With UCL's Innovation and Enterprise group and TfL, we've been working to develop a London-based industry innovation network on intelligent mobility. Paired with this effort, we are looking at an industry-focused continuing professional development course. And finally, we have been successful in bringing an Entrepreneur-in-Residence (supported by the Royal Society) to the TI to support all transport-interested staff and students that want to explore converting academic ideas into real world ventures.

Read on to learn about our activities. The rest of this report, after introducing our vision, USP, and mission and our Advisory Board, is organized into the key areas of our mission: research, impact, leadership, and capacity building.

Nicola Christie, Director
June 2018

Transport Institute Themes



Cover Image: Aerial view of London courtesy of NASA/GSFC/METI/ERSDAC/JAROS, and U.S./Japan ASTER Science Team

Vision

Working with any interested UCL researcher or external stakeholder, and using our network knowledge and convening power, we shape innovative interdisciplinary research projects and policy interventions that support the transformation of mobility.

USP

The Transport Institute adds value by using our unique leadership position at the centre of a UCL-wide research network to bridge disciplines, address research-to-practice translational gaps, and create or amplify research and impact of international excellence.

Mission

- Research: Configure broad and deep research capability across UCL's 11 faculties to jump-start innovative research projects and support inspirational ideas that produce research excellence in transport and mobility.
- Impact: Foster pioneering research partnerships among UCL researchers and other researchers, practitioners, businesses and end users in the UK and globally to enable real-world research impact in tackling mobility and transportation challenges.
- Leadership: Provide leadership by using network principles to
 - (a) Create physical and virtual spaces—platforms-- for people to connect
 - (b) Enable participation
 - (c) Be accountable and transparent in the way we work
 - (d) Help networks leverage high-level connections inside and outside UCL.
- Capacity Building: Drawing on the strengths of leading academics, seek out and support the best early and mid-career researchers in becoming the next generation of transport and mobility research leaders.

Transport Institute Advisory Board

Sue Percy, CEO Chartered Institution of Highways and Transportation



Lynn Basford, Managing Director at Basford Powers



John Dales, Director of Urban Movement



Jon Lamonte, CEO Transport for Greater Manchester



Sue Sharland, Non-Executive Director



Deirdre O'Reilly, Highways England



Ben Plowden, Transport for London, Director of Project & Programme Sponsorship in Surface Transport



Nick Tyler, UCL Chadwick Professor of Civil Engineering



Nigel Titchener-Hooker, Dean UCL Faculty of Engineering



Maria Kamargianni, Lecturer, UCL Energy Institute, Director of MaaSLab





Research

Mission: Configure broad and deep research capability across UCL's 11 faculties to jump-start innovative research projects and support inspirational ideas that produce research excellence in transport and mobility.

Research Facilitation

This year the TI set sights on some larger targets. After hosting a symposium on transport at night and discovering a broad group of interested parties around UCL, we assembled an initial proposal for an ESRC Research Centre on the Urban Night. We also assembled a proposal for a Centre for Doctoral Training (CDT) on Data Rich and Decarbonised Transport Systems. We had enthusiastic responses from researchers for both these proposals, but unfortunately we did not make it through the UCL 'internal filter' for developing the proposals further. However the process showed us that the TI has a place in assembling proposals that bring together researchers and departments that would not otherwise have the scope to pursue these opportunities.

We are now looking at converting our Urban Night proposal into an EPSRC programme grant or series of researcher-led projects. We are exploring converting some of the enthusiasm for a CDT into a continuing professional development course on intelligent mobility (more below).

In addition, Director Nicola Christie has been active in developing a bid for the Prevention Research Programme focused on non-communicable diseases such as obesity, diabetes, and heart disease.

UCL is part of a joint 'City Collaboratory' approach between Bradford and London that addresses upstream factors that affect health in areas of high deprivation. Transport and urban design have been identified as upstream factors that can affect mobility and physical activity which can contribute to non-communicable diseases such as obesity and its health side effects. The outline bid received high marks and the team is now scoping out for the second stage.

In autumn 2017 we received funding from UCL Innovation and Enterprise to develop a knowledge Exchange partnership with Transport for London. Although UCL has long had research projects with TfL, there has not been any way to see the broader impact of this work or to look strategically at the overall portfolio of projects. While some of the results of this project are addressed below under 'impact' and 'leadership' here



Image Flickr CC John Fraissinet

we mention that we have held one research workshop on Road Safety. The workshop involved about ten people, equal parts UCL and TfL. There was some good discussion about how UCL research activity aligns with current challenges that TfL is tackling, for example, not just to identify locations where there are high numbers of casualties, but also locations where risk is high, but collisions are low because people currently avoid them. Such identification would allow investment on the basis of road danger rather than simply on the history of casualties.

In this program of work we are currently working to set up two more research workshops, on green infrastructure and mode shift in outer London, with the aim of developing interest clusters where relationships can be built between UCL and TfL for ongoing collaboration and knowledge exchange.

Impact

Mission: Foster pioneering research partnerships among UCL researchers and other researchers, practitioners, businesses and end users in the UK and globally to enable real-world research impact in tackling mobility and transportation challenges.

In this section we look at impact in terms of four areas: policy input, network building, raising UCL's profile in transport, and industrial strategy engagement

Policy Input

In 2017 and 2018 the TI was active in facilitating research impact in several ways. We orchestrated input from eleven UCL academics from a wide range of departments on the London Mayor's Transport Strategy. UCL staff commented on a range of topics in the Strategy, including:

- active travel
- road safety
- resiliency & weather
- autonomous vehicles
- low and zero-emission vehicles
- transport at night
- devolution of rail services
- green infrastructure
- service integration



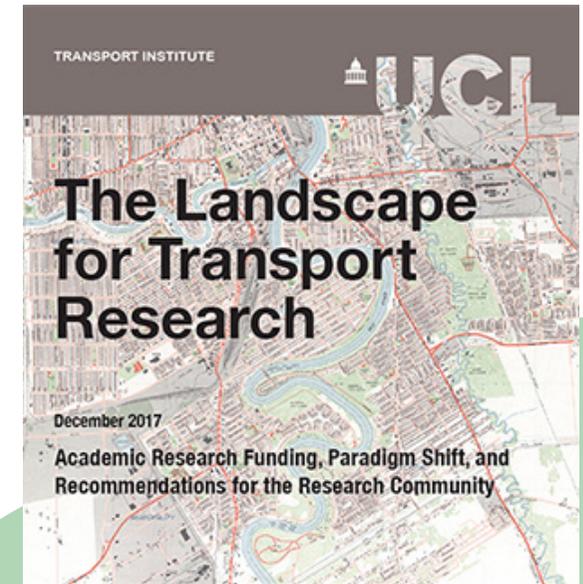
Comments on the input to Mayor's Transport Strategy:

'We know from their feedback the GLA valued this contribution [to the Mayor's Transport Strategy]'

'A contact there told me she was reading our response to the transport strategy a couple of weeks ago. Thanks again for pulling that together'

The TI also coordinated input to the Government's Air Quality Plan from two academics in two different engineering departments.

In terms of the landscape for cross-cutting research in transport and mobility, the TI has contributed on both the national stage and the UCL stage. At the end of 2017, on the national stage, we published our report 'The Landscape for Transport Research: Academic Research Funding, Paradigm Shift, and Recommendations for the Research Community.' The report involved interviews with researchers from around the UK and raised the attention of Research Councils and the DfT regarding future approaches to transport research funding. Deputy Director Ann Thorpe presented the findings in a workshop at the The University Transport Studies Group (UTSG) annual meeting and the group has taken up the report and is working on implementing some of its recommendations.



Comments on the research landscape report:

'Comprehensive and well written'

'It's an excellent report, you've captured a lot of the frustrations that we're experiencing'

'Well done– I'm pleased to see something like this taking action to investigate issues circling in academic networks and to try and add some substance and positioning to these'

On the UCL stage, we worked with several other cross disciplinary institutes/centres around UCL to provide feedback on the University's 2018 Research Strategy. The TI noticed that although Aim 2 of the Research Strategy is 'crossing boundaries' with a focus on cross-disciplinary research, the significant contributions of Cross-Disciplinary Centres and Institutes (XDCs for short across UCL), such as the TI, are hardly mentioned. In fact, the only explicit mention we found of XDCs was on page 16 of the 'Framework for Delivery.' We convened interested XDCs around UCL to identify common concerns and developed a response to the research strategy that included specific comments on the document itself, as well as broader strategic ideas about XDCs in a briefing document.

Network Building

An important part of what we do at the TI is go out and meet people to help build UCL's transport network among UCL stakeholders and external stakeholders. To that end Deputy Director Ann Thorpe has made a few presentations this year, including on transport at night at an Inclusive Cities conference at the Institute of Civil Engineers and for a visiting Chinese delegation for which she and two UCL researchers shared information about transport work at UCL.

Director Nicola Christie has been to Japan to present at the Global International Forum on Transport Safety on future transport safety objectives and the importance of taking an evidence-based approach to research.

In addition to presenting, TI staff have also participated in a number of external meetings and activities in networking for UCL. For example we have promoted UCL transport research when meeting high profile influencers in person, including Mike Brown (CEO of TfL), Val Shawcross (Deputy Mayor for Transport), Philip Kolvin QC (Chair of the Night Time Commission) and business people associated with London First.

Examples of events we've attended for UCL this year

- London First events on transport: pedestrianisation of oxford street; 1 year anniversary of night tube; Mike Brown's discussion of the Mayor's Transport Strategy, TfL's Innovation Group
- Breakthrough cities workshop by Volans and KTN
- All party parliamentary group on Data Analytics on big data and transport
- Transport Systems Catapult workshop to estimate the market size for transport services, data and CAVs
- Smart cities masterclass
- Space research domain development events
- DfT's symposium on Behavioral Psychology in Transport
- Independent Transport Commission's launch of the Health Report
- Transport for London's launch of the healthy streets initiative
- CIHT learned society meeting

Transport Institute's Social Media Presence



Twitter followers increase from 1061 to 1565



Mailchimp subscribers from 692 to 1000+

Raising UCL's Profile

The TI has also supported groups around UCL to raise the profile of Transport Activity at the university. For example we produced a booklet and programme for the CTS@50, the 50th anniversary of the Centre for Transport Studies. We regularly connect academics with reporters from news outlets such as Wired, Shipping Network Magazine, and The Economist.

Another important element of our work to raise the profile of UCL's transport research activity is through social media. We are active on Twitter and over the last year and a half we've grown our following from 1061 to 1565. We also operate a mailing list of external stakeholders, which has grown from 692 to more than 1000 in the past year and a half. As part of our work plan this year, we undertook a survey to better understand the interests of our external audience. We had an 12% response rate to our survey and found that our list is made up of transport providers, local authorities, national government departments, charities, businesses, and a few international organisations; about 70% are based in greater London. Regarding their interest in UCL:

74% want to hear about the latest research findings from UCL

54% would like to hear about UCL events

34% are interested in continuing professional development or executive education opportunities

18% would like to have masters students do projects with their organization

16% have physical locations or sites where research projects might be run

12% have data that might be suited to research purposes

12% are interested in UCL spin-out companies

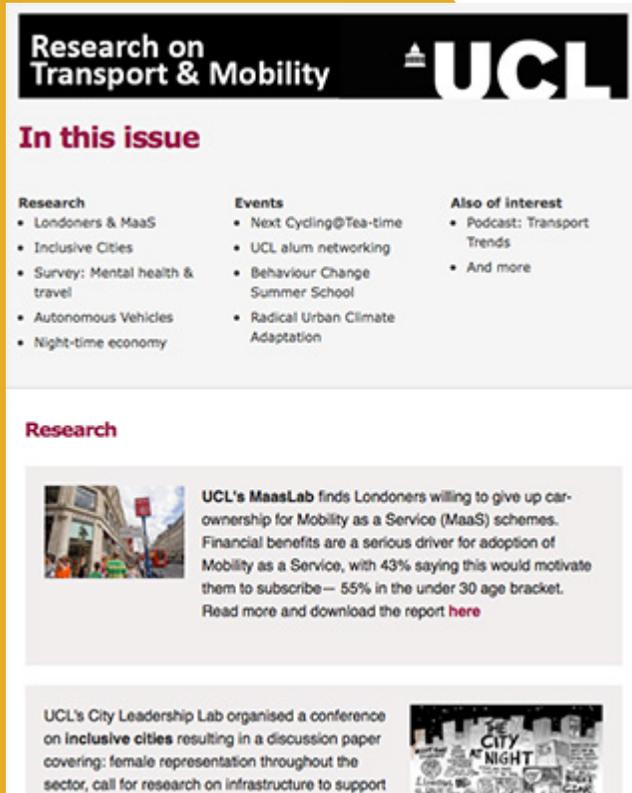
With this feedback in hand we launched a trial newsletter in May. See a snapshot of the newsletter, overleaf.

“I really liked the newsletter...I hope they continue”

“As a UCL graduate alumni and transport practitioner at the World Bank, I look forward to staying involved with the institute and getting as much info as I can. Thank you”

“Thank you very much for the newsletter. I think it’s a fantastic idea as we find, in a single place, links to reports, podcasts or research from the UCL or other sources that sometimes are difficult to find if one is not in a more academic environment. For example, I find interesting Dr. Cavoli’s podcast (perhaps there are more of these audios!!) and the MaaS report.”

The TI external newsletter snapshot



Industrial Strategy

A new area of work for the transport institute this year has been to develop more activity with UCL Innovation and Enterprise, and in the area of industry collaboration. This work originates in response to the UK’s new Industrial Strategy and the funding we anticipate arising from the Industrial Strategy Challenge Fund. The Strategy identifies mobility as one of four high-level challenges. Having some of our focus on industry collaboration and entrepreneurship is important positioning for taking advantage of new funding calls focused on business and research collaboration.

We were successful in getting an Entrepreneur in Residence (EiR) in April 2018, funded by the Royal Society. The EiR will be with us two days per month for a 2-year period. The programme of activity includes a kickoff workshop in June 2018, a series of guest lectures, and two or three business incubators run with the support of



Entrepreneur Ben Whitaker is Head of Innovation and Co-Founder of Masabi, offering mobile ticketing & innovative fare collection, all modes of public transport, 30 transport agencies globally

Leadership

Mission: Provide leadership by using network principles to

(e) Create physical & virtual spaces—platforms—for people to connect

(f) Enable participation

(g) Be accountable and transparent in the way we work

(h) Help networks leverage high-level connections inside & outside UCL

At the TI we try to identify areas where we can add value through our convening power and our perspective across all the transport activity at UCL. In the last 18 months we have convened UCL researchers around three cross cutting activities: TfL partnership, new internal mailing list, and exploration of a continuing professional development module.

Partnership with Transport for London

The first activity is relationship-building between UCL and TfL, as mentioned above. This work is funded by a grant we won (expiring July 2018) from UCL Innovation and Enterprise, to ‘enhance UCL-TfL knowledge exchange activity’ across both institutions.

In addition to the research workshop mentioned above, the TfL strategic partnership project has involved:

STREAMLINING CONTRACTS

We proposed streamlining contracts and finding other ways to make it easier to work together, and we are currently finalizing a new, GDPR-compliant Academic Services Agreement between UCL and TfL for use of TfL’s sensitive data. This has involved re-writing the agreement as well as responding to a new set of Adequacy Questions that TfL developed, concerning server locations, data deletion policies, and encryption protocols. TfL commented that it is extremely helpful having the TI serve as first point of contact for navigating UCL’s administrative services.



Comments on the UCL Internal Newsletter:

I'm so glad you're facilitating all this! Unifying the disparate parts of UCL.

This is a wonderful initiative, thank you, and I really appreciate being part of it.

Thanks very much - a good idea - I am working on a transport project at the moment.

which any member can contribute, to send weekly or bi-weekly round ups of funding opportunities, events and news.

Continuing Professional Development

Our third action for convening across UCL is a prospective Continuing Professional Development (CPD) module on intelligent mobility. With initial input from the Engineering Systems group, UCL's Innovation and Enterprise team and MaaS Lab (Mobility as a service Lab) we have begun exploring the feasibility of a multi-day CPD module. The proposed syllabus features topics such as: Mobility in the 21st Century; Data-supported travel and roads; Decarbonising Transport; and Mobility as a Service. The module would draw on academics from 8 or 9 groups and departments, including Centre for Transport Studies, Planning, STEAPP (Science Technology Engineering and Public Policy), Energy Institute, Science and Technology Studies, and Chemical Engineering.

DEVELOPING HEADS OF TERMS FOR A BROADER STRATEGIC PARTNERSHIP

We have also worked with TfL on a 'heads of terms' document for a longer term strategic partnership, which was kicked off by a meeting between Dr Celia Caulcott, UCL Vice-Provost for Enterprise, and Lauren Sager Weinstein, TfL's chief data officer.

WORKING TOGETHER TO SET UP AN INDUSTRY INNOVATION NETWORK

Together with UCL Innovation and Enterprise, the TI has worked with TfL to establish an industry innovation network. In early May 2018 we invited about 20 businesses and third sector organisations to join a founding group. At the meeting there was a great deal of enthusiasm for the network, provisionally titled The East London Mobility Alliance (Thelma), and we have proposed next steps of holding three beta events over the next several months before reconvening the founding group in late autumn 2018 to determine a structure for moving the network forward.

PARTICIPATING IN A TFL PROJECT ON THE CIVILIAN USE OF DRONES IN URBAN AREAS

London was successful in becoming one of Nesta's five 'Flying Higher' cities for exploring the civilian use of drones in urban areas. As part of strengthening the strategic partnership, the TI participated in the process of scoping the challenge and identifying relevant UCL academics for future involvement and also hosted a business briefing on the Flying Higher challenge.

ALUMNI NETWORKING EVENT FOR TFL EMPLOYEES AND OTHERS IN TRANSPORT

Another component of our partnership activity is an alumni event to encourage networking amongst UCL alumni working at TfL and current UCL research activity. In our original interviews with UCL alums working at TfL, a number of them said they would like an event that was for all alums in transport, rather than just TfL. As a result we are hosting an 'all transport' alumni event on 27th June.

Internal Mailing List

Our second activity for adding value through our convening power and our perspective across all the transport activity at UCL has been to develop an internal mailing list of more than 100 transport-interested researchers at UCL. We use this list, to

Capacity Building

Mission: Drawing on the strengths of leading academics, seek out and support the best early and mid-career researchers in becoming the next generation of transport and mobility research leaders.

Our capacity-building work this year involved delivering travel grants, topping up UCL Grand Challenge Small Grants, and making strategic appointments of early and mid career researchers.

Travel Grants

2017 was our first year setting up and delivering the first round of Regan-Smeed Travel fund grants to support early and mid-career researchers in making international collaborations.

The Regan-Smeed Travel fund was set up with a generous personal donation from Professor Amelia Regan, a Smeed Visiting Professor to UCL where she developed close ties to the Transport Institute. The fund is her way of helping other researchers travel for international research collaborations. The fund is named also for Rueben Smeed, a personal hero of hers. Smeed was the first Professor of Traffic Studies at UCL and founded the Centre for Transport Studies. He is known for chairing the Smeed report that recommended road congestion charging to the UK government in 1964, nearly 40 years before its introduction in 2003.

The successful candidates were:

- Taku Fujiyama, Centre for Transport Studies, CEGE, For Anglo-Dutch-Japan Seminar and Workshop on cycling for disabled and elderly people
- James Haworth, Space Time Lab, CEGE, For Facilitating cycle near miss research through international collaboration: Travel to Department of Civil Engineering, Monash University, Melbourne, Australia

Grand Challenges Small Grants

Our activity to support capacity building in the transport sector has also included seed funding for UCL's Grand Challenges Small Grants (GCSG). The TI put £2000 toward the GCSG under a UCLTI Urban Mobility award in the category of Sustainable Cities.

The standard funding available for small grants proposals was £4,000, but TI support allowed the GCSG team to offer two awards of £5,000 (splitting the extra £2,000 between the two applications). The successful projects were:

- Accelerating the uptake of sustainable urban transport policies and land use planning in the Global South. Investigators: Caren Levy (The Bartlett Development Planning Unit) and Clemence Cavoli (Civil, Environmental, Geomatic Engineering)
- Belfast Peacewalls Orientation & Routemapping Centre. Investigators: James O'Leary (Bartlett) and Kieren Reed (Slade)

Strategic Appointments

In our other activities we have appointed early and mid career researchers as follows:

- Ricardo Silva (Statistics) is a co-investigator on our TfL partnership project
 - Maria Kamargianni (Energy Institute, MaasLab) is a member of our advisory board
- We also sought out early and mid career researchers for our Urban Night proposal and our Road Safety workshop with TfL.





Contribution to UCL 2034

The Transport Institute's activity is aligned with **UCL 2034**, the 20-year strategy for UCL. Below we outline how the TI contributes under the strategy's six principal Themes.

Academic leadership grounded in intellectual excellence

The Transport Institute cultivates academic leadership by identifying areas where there is scope to bring academics together in forms and in areas that they wouldn't otherwise have the scope to pursue or build on their own. Examples include the urban night, continuing professional development in intelligent mobility, and green infrastructure for transport. In addition, our work to collect and assess academic views on the Landscape for Transport Research has had national ramifications, bringing the views of UCL and other academics to the attention of Research Councils. Our events also enable academics to make contributions to the intellectual life of their disciplines, at all career stages.

A global leader in the integration of research and education, underpinning an inspirational student experience

Events and activities run by the TI engage students and enrich the learning culture. For example our symposium on Transport at Night involved students. A key part of our work with TfL concerns making it easier for Masters and PhD students to engage in projects with TfL. Our work on the industry innovation network with London companies and with TfL's Drone project, has also led to discussions about opportunities for Masters and PhD students.

Addressing global challenges through our disciplinary excellence and distinctive cross-disciplinary approach

TI is helping UCL address global challenges in several ways. For example, the government has identified intelligent mobility as a grand challenge and we are working across UCL to connect researchers to innovation (network) and training (CPD) in this area. We also contributed funds to UCL's own Grand Challenges grant scheme. This year the TI also contributed to cross-disciplinary activity by working with other Cross Disciplinary Centres (XDC) to provide input to UCL's 2018 Research Strategy.

An accessible, publicly-engaged organisation that fosters a lifelong community

The Transport Institute fosters productive relationships with local communities by creating events and groups that draw in alumni (networking for alums-in-transport) and external stakeholders such as with our industry innovation network. Our newsletter reaches over 1000 interested community members.

The TI has furthered UCL's public engagement in ways that, again, individual departments and groups might find hard to accomplish singly. We identified specific academic knowledge areas and orchestrated thoughtful input to both the Mayor's Transport Strategy for London and the Government's Air Quality Plan.

London's Global University: in London, of London and for London

The TI has a strong record of engaging with key agencies in London, in the last 18 months the focus has been Transport for London, but we have also regularly engaged with London First, and participated in a wide range of London events to better connect UCL's transport-interested researchers to the London context. In forming a London-focused industry innovation group, we intend to further engage with East London and Here East.

Delivering global impact through a network of innovative international activities, collaborations and partnerships

Finally, the TI was active in an international network, along with visitors from the United States and China, the TI has international members on its external mailing list who keep in touch with UCL through our work.



Director Nicola Christie is a psychologist whose research career began in 1985 at the Transport Research Laboratory, followed by a short time at MVA and then 10 years at the University of Surrey before joining UCL. Nicola's research interests have focused on transport safety and particularly the causes and consequences of unintentional injuries and the evaluation of interventions to reduce them. She also has an interest in the safe mobility of vulnerable populations. Nicola is an active member of Parliamentary Advisory Council for Transport Safety www.pacts.org.uk and is part of their Road User Behaviour Working Party. She is also a UK Transport Safety Commissioner and represents the UK in the Global Interactive Forum on Traffic Safety in Japan. She publishes widely in a range of journals covering safety, the environment, mobility and health.



Deputy Director Ann Thorpe brings to TI her background in sustainable design and development and experience in design thinking for policy. She was previously with UCL's Department of Science, Technology, Engineering and Public Policy where she ran the Masters in Public Administration. Prior to that she taught at the Bartlett School of Architecture on the topic of sustainable contexts for architecture. Ann also has experience in a transport startup business and the public sector. She helped to develop and market an online transportation-based startup and she has worked for a local authority. She is the author of two books (published by Routledge and Island Press) on sustainability and design.



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