

# Transport Research Bulletin

Transport Research  
Institute Newsletter

Issue No 6 – Dec 2019



Transport  
Research  
Institute

## Welcome to TRI's Christmas 2019 Newsletter

We hope you enjoy reading about TRI's recent activities and we all send our best wishes to you for a happy Christmas and peaceful New Year. *You can also subscribe to our blog to receive regular updates: [blogs.napier.ac.uk/tri](https://blogs.napier.ac.uk/tri)*  
*Feel free to get in touch with us by email with any queries you may have: [tri@napier.ac.uk](mailto:tri@napier.ac.uk).*

## Graduations



*L-R: Dr Kathryn Stewart,  
Dr Jonathan Cowie, Suzanne Meade*

**We were delighted to see two of our research students graduate in October:**

**Suzanne Meade** – received a Doctor of Philosophy for her research entitled 'Modelling and analysing cyclists' road safety performance in Scotland'.

**Ke Du** – received a Master by Research for her research entitled 'Transportation Engineering – green port strategies in China'.



*L-R: Dr Kathryn Stewart, Ke Du,  
Dr Jonathan Cowie*



*Dr Jonathan Cowie pictured on the left with his Transport Planning MSc students.*



### Awards



#### SEBE Best Paper Competition 2019

Congratulations to our SEBE research student winners in the recent Best Paper Competition.

- 1<sup>st</sup> prize: **Ruth Saint**, Whole-life design and resource reuse of a solar water heater in the UK, published in *Engineering Sustainability*
- 2<sup>nd</sup> prize: **Juan Bernal-Sanchez**, Particle-scale interactions and energy dissipation mechanisms in sand-rubber mixtures, published in *Géotechnique Letters*
- 3<sup>rd</sup> prize: **Leonardo Binetti**, Simultaneous measurement of temperature and relative humidity using a dual-wavelength erbium doped fiber ring laser sensor, published by IEEE

Any paper accepted in peer-reviewed journals or conference proceedings may be submitted to the competition. The papers are evaluated on the basis of **four criteria**:

- **Originality**: the innovative character of the paper. Papers that demonstrate originality may engage with new and/or complex problems; develop innovative research methods, methodologies and analytical techniques; provide new empirical material; and/or advance theory or the analysis of doctrine, policy or practice.
- **Significance**: whether and how the paper has developed the intellectual agenda of the field. It may be theoretical, methodological and/or substantive.
- **Rigour**: the intellectual precision, robustness and appropriateness of the concepts, analyses, theories and methodologies deployed within the paper. Account will be taken of such qualities as the integrity, coherence and consistency of arguments and analysis, such as the due consideration of ethical issues.
- **Presentation**: the ease with which the reader can determine what the author is trying to present.



**RISE**  
AWARDS 2019



#### RISE Awards:

Congratulations to Francesco Pomponi and Bernardino D'Amico on winning the award for the Design, Innovation & Creativity category at the 2019 RISE Awards.

Their poster illustrates research funded by the RAEng on post-disaster, post-conflict sheltering which led to some follow-on funds through an Industry Academia Partnership Programme (focused on sustainable materials).



### Leavers

We were sorry to say goodbye to the following members of staff and wish them all the very best. We hope to continue working with them in the future.

Prof Tom Rye left at the end of October and is now working with Molde University, Norway.

Richard Llewellyn has taken up a post with Transport Scotland, but is continuing with his PhD research at Edinburgh Napier University.

Dr Kathryn Stewart is enjoying her free time to pursue her own interests.

Dr Suzanne Meade – after graduating in October, Suzanne has joined Transport Infrastructure Ireland.

### Newcomers to the School of Engineering and Built Environment

Prof Simeon Keates (Dean of School of Engineering & the Built Environment); Prof Hongnian Yu (Head of Research); Prof Pat Langdon (Interim Head of TRI).

Akin Obafemi joins TRI as a new PhD Student (supervised by Grigorios Fountas and Achille Fonzone). His tentative topic of research is 'Group activity and travel scheduling with shared autonomous vehicles'.

### PhD Research Students

Mohamed Jama Mohamed, a research student has recently published a research paper titled '*Operational and Policy Implications of Ridesourcing Services a Case of London*' in the journal of '*Case Studies on Transport Policy*'. This paper is part of ongoing research that looks at the user characteristics of Uber services and impacts on public transport policy and operations. It is the first published research that looks at the implications of Uber services in London and the UK and one of the primary published research globally that investigates the impacts of UberPOOL. The paper is available via the following link: <https://doi.org/10.1016/j.cstp.2019.07.013>

Emine Akgun has published a paper: This study investigates how supportive urban freight transport (UFT) policies work in conjunction with stakeholder collaboration to support public-led urban consolidation centre (UCC) developments. The methodology was a multiple case study approach, comparing cases in Sweden and Scotland, two countries that are more/less advanced in their approach to UFT policy. The key finding reveals that while UFT policies such as time window restrictions can support successful UCCs, they cannot be considered in isolation from the collaborative UFT policy setting established by the local authority. A successful development also requires a commitment to financially support the UCC over at least the medium term, allowing time for the system to mature and collaborative service offerings to be developed.

The article can be found at:

<https://www.tandfonline.com/eprint/CUZ47BJ9EUCRDEYF2RVA/full?target=10.1080/13675567.2019.1679743>

### Presentation/Conference/Invited speakers

Prof Adrian Davis has been invited to speak, once again, at [The University of Oxford Global Challenges in Transport: Health and Wellbeing Course](#) on 13th December. The Global Challenges in Transport courses are run by the Transport Studies Unit, University of Oxford. The programme provides decision-makers from a range of sectors with the necessary skills and expertise to address the complex challenges of sustainable transport futures.

Dr Achille Fonzone worked with the [3 Revolutions Future Mobility Program](#) as a visiting scholar at UC Davis ITS in September. UC Davis and Edinburgh Napier University will carry out a joint survey on innovative mobility systems in the US and in the UK to compare attitudes and behaviours in the two Countries. Achille gave a talk on "Where will (2 of) the 3REV take Edinburgh" at the [3 Revolutions Future Mobility Research Workshop](#), which saw the participation also of the key industrial players of the world of innovative mobility (from ridehailing companies like Uber and Lyft, to car manufacturers like BMW, Daimler, Mercedes, Honda). Achille was invited to hold a seminar for the [Sustainable Transportation Energy Pathways Program](#) (STEPS+), where he talked about "Passenger information and public transit performance".





*Dr Achille Fonzone pictured  
(7<sup>th</sup> from the left) at ITS  
Davis Research Centre, US*

Dr Grigorios Fountas participated and presented at the Workshop “Urban Vulnerability, risks, safety, and security” being held in Beijing, China between 5 and 8 November 2019. The workshop was co-organized by the Tsinghua University and Loughborough University. His involvement to the workshop was sponsored by the Newton Fund of the British Council.

Prof Adrian Davis presented at the Transport & Health workshop on 22<sup>nd</sup> October at the Lighthouse, Glasgow. The event was co-organised by TRI and the Glasgow Centre for Population and Health. The Active Nation Commissioner for Scotland, Lee Craigie, also spoke as well as Laura Murdoch, Director of Bus, Accessibility and Active Travel, at Transport Scotland.

Prof Wafaa Saleh was invited as an external committee member to participate in a habilitation committee at the University of Natural Resources and Life Sciences Vienna (Universität für Bodenkultur Wien – BOKU) on 15<sup>th</sup> October. This is the qualification to conduct self-contained university teaching and is the key for access to a professorship in many European countries.

Prof Wafaa Saleh was invited to take part at the EC-US Round Table Panel at the [\*\*6th International Conference on Women's Transportation Issues\*\*](#), September 10-13, 2019 in Irvine California. The TRB meeting aims to identify emerging women's issues in the use of transportation; define research needs related to these issues; and stimulate, gather, and disseminate relevant research findings. Wafaa presented “Revealing actionable knowledge from data to support fair women's inclusion in the transport system.”

Dr Grigorios Fountas disseminated findings of his latest research endeavours in the 5th Annual International Conference on Transportation, which was held in Athens, Greece from 3 to 6 June 2019. The Conference was organized by the Athens Institute for Education and Research and was focused on various aspects of transportation research, practice and education. Greg was involved in the presentation of 3 studies in the areas of human factors and emerging transportation technologies. He also chaired the Session IX of the conference, which was devoted to advances in research on maritime transport.

Dr Grigorios Fountas presented papers and chaired a session at the ANT 2019, the 10th International Conference on Ambient Systems, Network and Technologies, which was held between 29th April and 2nd May in Leuven, Belgium. He presented three research papers in the areas of traffic safety and public perceptions of emerging transportation technologies.

Prof Tariq Muneer presented at the following events:

- 9th May 2019: Stakeholders event at Edinburgh Napier University, Craiglockhart. Poster presentation on ‘Electric vehicles’.



- 13th May 2019: Public address at Dundee Botanical Gardens on 'Arbroath solar/wind farm performance and thermal storage'.
- 21st May 2019: Talk on 'Maths in Engineering' at Pint of Science, 2019 held at Canongait, Edinburgh.
- 2nd July 2019: Live internet talk on 'How clean are electric vehicles'. Organised by Energy Saving Trust.
- 24th July 2019: Talk on 'Indian numbering system'. Organised by Consulate General of India, Rutland Square, Edinburgh
- 5th November 2019: keynote speech on Electric Vehicles for the Agriculture Sector International Conference held at Maribor University, Slovenia

Prof Tom Rye chaired the **2019 annual UTSG conference** at Leeds University on 8<sup>th</sup>-10<sup>th</sup> July as one of his final activities during a 3.5 year period chairing the organisation. TRI was well-represented at this year's UTSG conference in Leeds with papers from PhD students Mohamed Jama Mohamed and Augustus Ababio-Donkor, and from Dr Grigorios Fountas and Prof Tom Rye on the topics of:

- 'The utilisation and user characteristics of Uber services in London' – *Mohamed Jama Mohamed, Tom Rye and Achille Fonzone*. This paper is currently under review for publication in a special issue of the Transportation Planning and Technology Journal.
- 'An Empirical Analysis of the Effect of Driver Fatigue, Gender, and Distracted Driving on Perceived and Observed Aggressive Driving Behaviour' – *Grigorios Fountas, Sarvani Sonduru Pantangi, Kevin Hulme and Panagiotis Anastasopoulos*. The paper was recently published in "*Analytic Methods in Accident Research*".
- 'What is the big problem with cars? Problematisations, measures and blind spots in local transport and land use planning' – *Robert Hrelja, Tom Rye and Karin Thoresson*
- 'Understanding transport mode choice for commuting: The role of Affect' – *Augustus Ababio-Donkor, Wafaa Saleh and Achille Fonzone*

Augustus Ababio-Donkor, PhD student, presented his paper at the Thredbo 16 Conference, Singapore in August. He presented part of his PhD research work on: "The role of personal norms in the choice of mode for commuting". This paper draws upon the theories of consumer behaviour and recent examples of latent and hybrid choice models to develop a latent choice model.

Benjamin Afuye, PhD student, attended the **10th Applied Human Factors and Ergonomics (AHFE) International Conference 2019** to present a topic that was drafted from his EEG research study title: 'Road surface roughness and urban bus ride quality in Edinburgh: An EEG approach'.



Lucy Downey and Yvonne Lawrie enjoyed meeting and having discussions with delegates visiting TRI's exhibition stand at the Scottish Transport Show at the Corn Exchange on 25th September.



### Events



**The 9th International Symposium on Travel Demand Management (TDM 2019)**, organised and hosted by the Transport Research Institute, was held at the Edinburgh Grosvenor Hotel from 19th to 21st June. The symposium was a great success with speakers from across the world, including our invited speakers: Dr Chandra Bhat, Prof Juan De Dios Ortuzar, Prof Glenn Lyons.

The presented papers were also reviewed for inclusion in a Special issue on Travel Demand Management and Smart Cities in the Journal Transportation Research part A.

The 10th TDM Symposium will be organised by the Technological University Dublin in 2021.



**The 54<sup>th</sup> UK Conference on Human Responses to Vibration (UK HRV)**, hosted by Edinburgh Napier University and Reactec Ltd, took place at our Craiglockhart Campus on 24<sup>th</sup>-26<sup>th</sup> September. It was an opportunity for specialists from the UK and further afield to exchange information, disseminate research findings and get updated on current issues related to human exposure to vibration. Presented papers covered all aspects of hand-transmitted vibration, whole-body vibration and motion sickness. A fun evening was had by all at the Scottish-themed conference dinner with piper James Nicholl. Dr Mark Taylor's research concerning cyclist vibration exposure, public health and active travel is attempting to demonstrate a clinical need to improve Scottish cycling infrastructure. Through developing low-cost electronics packages mounted on bicycles, infrastructure could be managed in a more sustainable manner and improve safety standards. Professor Chris Oliver, a retired orthopaedic trauma surgeon who co-led the research, also discussed the findings at the 54th UK Conference on Human Responses to Vibration.





Scottish Transport Secretary Michael Matheson MSP gave the keynote address at our 5th Annual Electric Vehicle Event on 9th October 2019. Andy Robinson, Head of ULEV delivery from Transport Scotland presented at the event and we are grateful to Transport Scotland for their continued support. There was an opportunity to test ride electric bikes and view electric vehicles, including Alexander Dennis' fully electric double decker bus. **Save the date: Thursday 8<sup>th</sup> October for the 6<sup>th</sup> Annual Electric Vehicle Event.**

*Prof Tariq Muneer, Mr Matheson and Prof Simeon Keates (L-R) in front of the electric double decker bus.*



### Project CAV Forth

CAV Forth is a collaborative project part funded by the UK Governments' Centre for Connected and Autonomous Vehicles (CCAV). A consortium of UK partners are in the process of designing and developing a fleet of full size autonomous buses that will service a new Stagecoach operated route running from Ferrytoll P&R in Fife, across the Forth Road Bridge into Edinburgh Park's transport interchange.

### Expert Session 11th September 2019

TRI hosted an Expert Session to explore the potential of this trial, the emerging technology, hopes/fears and expectations for how the service might look, feel and operate.

### Design Jam 12th October 2019

Our 'Design Jam' event brought together East Scotland's citizens with researchers, designers, developers and Stagecoach to co-design how this service works for real people. Together we explored acceptance of the technology, how the service can be inclusive & accessible and what makes for a positive passenger experience.

### Co-design Panel 26th November 2019

Stagecoach and TRI held the first of four co-design panel workshops. Each workshop will build on work that has been carried out by the Partners in between sessions and will tackle different, but complimentary areas of the service development. The first session explored our research findings and the first draft of our vision for future autonomous bus services and considered what should be prioritised for development in the CAV Forth trial.



### Recognition

Grigorios Fountas - Member of the Editorial Advisory Board of the Elsevier's journal "Analytic Methods in Accident Research" (ranked #1 journal in 2019 in both Safety Research and Transportation subject areas per its Scopus CiteScore and Impact Factor)

Grigorios Fountas – Appointed as Fellow of the Higher Education Academy of the UK [October 2019]

Adrian Davis - Chair of the Transport Working Group of the Cleaner Air for Scotland Review

Achille Fonzone – Appointed member of Steering Group on STAR Committee

Adrian Davis – Appointed member of Programme Group on STAR Committee

### Current projects

Prof Wafaa Saleh (Project Lead), Augustus Ababio-Donkor: **DIAMOND** (EU Horizon 2020 Project)  
[1 Oct 2018 - 30 Sep 2021]

Dr Achille Fonzone (Project Lead): **Park4SUMP** (EU Horizon 2020 Project) [1 Sep 2018 - 28 Feb 2022]

Dr Achille Fonzone (Project Lead), Prof Christiane Bielefeldt, Dr Damian Stantchev: **SUNRISE**  
[1 May 2017 - 30 Apr 2021]

Prof Tom Rye (Project Lead), Prof Adrian Davis, Lucy Downey: **Continental Style Zebra Crossings** (Rees Jeffreys Road Fund Project) [1 Dec 2018 - 30 Nov 2019]

Dr Jonathan Cowie (Project Lead): **Smart Urban Freight Logistics Hubs** (SURFLOGH) [1 Jun 2017 - 31 Oct 2020]

Dr Achille Fonzone (Project Lead); Lucy Downey: **An Autonomous Bus Service from Park & Ride Across Forth Bridge to Edinburgh Park Train & Tram Interchange** [1 Apr 2019 - 30 Nov 2021]

Dr Achille Fonzone (Project Lead); Dr Grigorios Fountas (Co-Investigator): **Attitudes and behaviours of potential users of shared mobility in small-to-medium cities and rural environment.** [1<sup>st</sup> Oct 2019 – 31 Jul 2020]

Dr Grigorios Fountas (Project Lead); Dr Achille Fonzone (Co-Investigator): **Why bicyclists are still vulnerable to road accidents? New insights to enhance bicycle safety.** [1<sup>st</sup> Oct 2019 – 31 Jul 2020]

Prof Adrian Davis (Project Lead); Dr Grigorios Fountas: **Borders Council Eddleston Traffic Calming Evaluation** [1 Mar 2020 - 31 Jul 2020]

Prof Adrian Davis (Project Lead): **Increase total physical activity time through active travel across the population** [1 Sep 2019 - 31 Aug 2020]

Prof Adrian Davis (Project Lead): **Essential Evidence for Scotland** [1 Jan 2019 - 31 Dec 2019]

Prof Adrian Davis (Project Lead); Tom Rye: **Transport Scotland Research Framework (subcontract)** [1 Oct 2018 - 30 Nov 2019]

Prof Wafaa Saleh (Project Lead); Augustus Ababio-Donkor: **Revealing fair and actionable knowledge from data to support women's inclusion in transport systems** [1 Nov 2018 - 31 Oct 2021]