## Imperial College London

## **Centre for Transport Studies**

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December 2006

**Congratulations to Didik Rudjito who successfully defended his PhD dissertation.** The topic of his dissertation was "The Application of Fuzzy Logic to Multi-ClassTraffic Assignment in Developing Countries". Dr. Rudjito was supervised by Professor Mike Bell. He will be returning to his post in the Ministry of Public Works in Indonesia.

Congratulations to Robin North who successfully defended his PhD dissertation entitled "Assessment of real-world pollutant emissions from a light-duty diesel vehicle". Dr. North was supervised by Dr. Washington Ochieng, Dr. Robert Noland and Professor John Polak and supported through an EPSRC Doctoral Training Award. Additional research funding was provided by the Rees Jeffreys Road Fund. He will continue as a Research Associate at the Centre for Transport Studies, working on the MESSAGE project.

October 2006

**Congratulations to Moazzam Ishaque who successfully defended his PhD dissertation.** The topic of his dissertation was "Policies for Pedestrian Access: Multimodal Trade-off Analysis Using Micro-simulation Techniques". Dr. Ishaque was supervised by Dr. Robert Noland. He has taken up employment with Jacobs Ltd. working as a Transport Engineer.

Congratulations to Jan-Dirk Schmöcker who successfully defended his PhD dissertation. The title of the dissertation was "Dynamic Capacity Constrained Transit Assignment" and Dr. Schmöcker was supervised by Prof. Mike Bell. Dr. Schmöcker continues to work at CTS as a Research Associate.

Prof. David Levinson from the University of Minnesota will be visiting CTS for the next 10 months to conduct research on The Co-Evolution of Transport Networks and Land Use. His visit and the project are being enabled by a research grant obtained from the Economic and Social Research Council by Dr. Robert Noland. This project will evaluate the growth of transport networks in Britain over the last 100 years and provide techniques for understanding how future growth may occur.

Professor Md. Jobair Bin Alam from the Bangladesh University of Science and Technology has commenced a 6 month visit to CTS, which is supported by a Postdoctoral Fellowship from the Association of Commonwealth Universities. Professor Alam will be working with Professor John Polak on projects concerned with the relationship between transport and economic development and on aspects of discrete choice modelling.

September 2006

Drs Washington Ochieng and Arnab Majumdar have been awarded full funding by NATS to support a PhD researcher in air traffic management. This prestigious and enhanced scholarship will make an important strategic contribution to NATS' operations and Imperial's research activities in ATM, by developing a reliable method to measure the impact of new technologies and procedures on en-route airspace capacity.

**Seminar on demand modelling in Hong Kong.** Professor John Polak has been invited to present a seminar on recent CTS work on demand modelling to the Hong Kong Society for Transport Studies. The seminar is entitled "Recent Experience in Modelling Risky Choice Behaviour: Expected Utility Theory and Alternatives".

August 2006

**Dr Stephane Hess wins the Eric Pas Dissertation Prize.** Congratulations to Dr Stephane Hess whose PhD thesis "Advanced Discrete Choice Models with Applications to Transport Demand" was completed in CTS under the supervision of Professor John Polak was awarded the 2005 Eric Pass Dissertation Prize at the 11th International Conference of the International Association for Travel Behaviour Research, held in Kyoto. The Eric Pas Prize is the most prestigious PhD award in the field of travel demand and travel behaviour research.

July 2006

**Dr Dan Graham was invited to talk at the International Conference on Fuel Tax Development in Beijing.** The purpose of the meeting was to help inform officials from the Chinese Government to promote cleaner and more efficient urban transport.

The Centre for Transport Studies, along with Imperial College London Consultants, have successfully won a Scientific Services Framework bid with Transport for London to carry out Health Impacts Assessment for the London Low Emissions Zone (LEZ). Work issued under this contract will be a joint effort between CTS, the Centre for Environmental Policy, and the Dept. of Epidemiology. Analysis of the London LEZ will allow a better understanding of the health benefits that

may be achieved by reducing the emissions of heavy goods vehicles in London.

Zia Wadud was awarded an international travel grant by the Royal Academy of Engineering to attend a workshop on 'Individual Choice Behaviour: Theory and Application of Discrete Choice Analysis' at the Massachussetts Institute of Technology. This grant also allowed Zia to attend the Consumer Expenditure Survey Microdata Users' Workshop at the Bureau of Labor Statistics in Washington DC.

The Centre for Transport Studies is to join the European funded Cooperative Approach to Air Traffic Services (CAATS-II) project to develop best practice manuals for assessing new air traffic management concepts. CAATS-II has 11 partner organisations in 7 countries, including ISDEFE (Spain), Boeing Research and (Spain), Stichting Nationaal Lucht-Ruimtevaartlaboratorium Technology en (Netherlands), NATS (UK), Eurocontrol Experimental Centre (France) and Deep Blue (Italy). Bob Noland and Victoria Williams will lead the contribution from the Centre for Transport Studies, which will focus on environmental impacts. Recruitment of a research assistant/associate to join the project team is now underway. The project will run for 36 months.

June 2006

Jan-Dirk Schmöcker has returned from a one year research visit to Kyoto University. At Kyoto University he conducted research on capacity constrained transit assignment and collaborated with Dr. Fumitaka Kurauchi.

Dr Dan Graham has been awarded funding for two new PhD scholarships to investigate the relationship between major transport investments and economic productivity. One studentship is funded by Transport for London and the other by the Department for Transport in collaboration with the Economic and Social Research council.

Panagiotis Angeloudis undertook an internship with the United Nations Conference for Trade And Development (UNCTAD) in Geneva. This involved studying the security measures taken by Governments and individual ports in response to the recent International Ship and Port Security (ISPS) code.

Dr Washington Ochieng is one of the recipients of the Imperial College Award for Excellence in Teaching in 2006. This award is given biennially to members of staff who have made the most outstanding contribution to teaching. We congratulate Dr. Ochieng for this significant achievement.

Dr. Shaojun Feng has been elected as an Associate Fellow of the Royal Institute

**of Navigation (AFRIN).** The award is in recognition of his high level of professional achievement and experience in the advancement of navigation research.

May 2006

Mr. Umar Bhatti of the Centre for Transport Studies is one of this year's Winners of the Student Research Paper competition of the US Institute of Navigation (ION). This is a globally competitive and prestigious award that recognises the cutting-edge (novel) research that students conduct on positioning and navigation around the world. Umar's award is for his paper submission entitled "An Improved Sensor Level Integrity Algorithm for GPS/INS Integrated System". In addition to a Certificate of achievement, the award covers registration and a full travel (and subsistence) sponsorship to this year's annual international conference on Global Navigation Satellite Systems (GNSS) to be held in Fort Worth, Texas, USA in September. Umar's supervisor is Dr. Washington Ochieng who is delighted that Umar's hard work has been recognised in this way.

CTS wins £3.5m EPSRC grant to extend its work on modelling the environmental impacts of transport. Traffic makes a significant contribution to air pollution in inner cities. Governments devise policies and traffic management schemes to minimise the impact of air pollution. More detailed knowledge of how traffic-generated pollution behaves in the urban environment could greatly enhance these policies and schemes. A research consortium lead by the Centre for Transport Studies has been awarded a £3.5m grant under the Engineering and Physical Sciences Research Council's e-Science demonstration programme to develop e-Science and grid technologies to enable data from a network of mobile environmental sensors to be gathered and interpreted. The project is jointly funded by the EPSRC and the Department for Transport. The Pervasive Environmental Sensor Grids (PMESG) project brings together leading research teams from Imperial College London, and the Universities of Cambridge, Southampton, Newcastle and Leeds who will work closely with one another and with a number of major industrial partners and local authorities. Professor John Polak, who heads the project comments "The PMESG project offers an enormously exciting opportunity for us to bring about a step change in the quality and timeliness of the data available for modelling the environmental impacts of traffic in urban areas. This is an opportunity that we relish". Further information on the project can be obtained from

## www.pmesg.org.uk

CTS and China Academy of Transport Science jointly establish new China Urban Sustainable Transport Research Centre in Beijing. The Centre for Transport Studies is part of a successful consortium of European and Chinese research organizations, headed by the China Academy of Transport Sciences that has been awarded a grant from the Volvo Research and Education Foundations to establish the China Urban Sustainable Transport Research Centre. Professor John Polak was a guest at the inauguration of the Centre in Beijing and has been invited to serve Academic Advisory Committee of CUSTReC. During his visit, he also contributed a keynote presentation to

China-EU workshop on sustainable urban transport, which was also held in Beijing.

Prof Marcus Wigan, who holds appointments at the University of Melbourne and Napier University has been appointed a Visiting Professor in the Centre for Transport Studies. Prof Wigan has extensive experience both in academe and in practice and has contributed to a number of recent CTS projects. Prof Wigan will contribute to the development of several areas of work within CTS including transport data methods, safety and logistics.

April 2006

Prof Martin Lee-Gosselin, until recently Director of the interdisciplinary research group on mobility, environment and safety (CRAD) at the University of Laval in Canada has been appointed a Visiting Professor in the Centre for Transport Studies. Professor Lee-Gosselin is a longstanding collaborator with Prof Polak in the area of transport data methods and travel behaviour. This appointment will enable the development of a number of new directions in this work, including the work of CTS in the BP-funded Urban Energy Systems project.

March 2006

CTS wins call-off contract to provide advice on rail modelling issues to UK Department for Transport. The Centre for Transport Studies, working as part of a consortium headed by the Jacobs Consultancy has been selected provide advice on a variety of transport modelling and analysis questions on a call-off basis to the Network Analysis and Modelling/Rail Technical and Professional Directorate of the UK Department for Transport, over the period 2006-9. Professor John Polak commented "We are delighted to have the opportunity to extend further our policy-related modelling work with the DfT, especially in the area of rail systems, where through the work of the Railway and Transport Strategy Centre, we have considerable experience of applied policy work in the rail sector".

Prof. Mike Bell has been appointed a member of a Review Committee for the TU Delft Research Centres (one of which is in Transport). Other UK members include Prof Hankin (Pro Rector Research) and Prof David Bannister, from the Bartlett School.

Prof. Mike Bell has been appointed to a Board of Experts for the analysis of the travel demand forecasting and other transport-related impacts of the construction of the bridge over the Messina channel between Sicilly and the Mainland of Italy. When completed, this will be the largest single span suspension bridge in the world. The Board of Experts will review documents produced by transportation consultants and will give general advice at be 4 to 6 meetings over the next

Congratulations are due to Dr. Victoria Williams, Dr. Washington Ochieng, Prof. Mike Bell, and Prof. John Polak of the Centre for Transport Studies (CTS) who have been Elected Members of the Engineering and Physical Sciences Research Council (EPSRC) Peer Review College with effect from January 2006 for a period of three years. The College assists the EPSRC with the review of research proposals and final project reports. Members also serve on special panels to rank proposals. Members of the College are recognised leaders in research in their fields.

Washington Ochieng, John Polak and Arnab Majumdar have been awarded a new EPSRC research project entited "Assessment of the impact of future air traffic management technologies and procedures on airspace capacity". The work will build on existing research within CTS to study in detail the main parameters that affect airspace capacity and to develop mathematical models relating these parameters to capacity. The models will benefit aviation authorities for the strategic planning of current and future airspace leading to reduced safety risks and costs associated with congestion. The project will be undertaken in collaboration with DERA and EUROCONTROL.

February 2006

Mr. Hongqian Liang has joined the Centre for Transport Studies to work with Professor John Polak on the development of the National Transport Data Framework. This is a two year project, funded by the UK Department for Transport, which will develop middleware for the processing and dissemination of large scale transport datasets, including real time datasets. Mr Liang is a graduate of Tsinghua University and has recently completed his doctoral studies on Computer Science at Napier University.

Congratulations to Mohammed A. Quddus who has been awarded a PhD degree for his dissertation entitled "High Integrity Map Matching Algorithms for Advanced Transport Telematics Applications". Dr. Quddus was supervised by Bob Noland and Washington Ochieng. His research developed and tested a series of map matching algorithms that provide a high degree of reliability and that can potentially be applied in numerous telematics applications.

CTS recognised for postgraduate training by ESRC. The Centre for Transport Studies has been awarded recognition as a postgraduate training outlet by the Economic and Social Research Council (ESRC) for the period 2006-9. Professor John Polak commented "We are delighted to receive this recognition from ESRC. CTS has a long tradition of multi-disciplinary work in transport and ESRC recognition will enable us to extend the scope of this work further". In a related development, Dr Dan Graham has been awarded an ESRC PhD studentship to enable him to recruit a PhD student to further develop Dr Graham's work on the agglomeration and productivity impacts of transport infrastructure investment.

Prof. John Polak and Rajesh Krishnan were invited to attend a meeting with the Department for Transport's Chief Scientific Advisor, Prof Frank Kelly. The meeting was on Data Accessibility and Real Time Travel Information and Services and Mr. Krishnan gave a presentation on the generation and presentation of travel information.

## January 2006

CTS contributes to EU 6th Framework Integrated project on cooperative vehicle infrastructure systems. The Centre for Transpot Studies is a partner in a new EU 6th Framework Integrated project on cooperative vehicle infrastructure systems. The CVIS project aims to design, develop and test the technologies needed to allow road vehicles to communicate and network directly with the roadside infrastructure. CTS will be worrking closely with Transport for London in developing and evaluating a number of CVIS application in London. Further information on the CVIS project can be found at <a href="http://www.ertico.com/en/activities/efficiency\_environment/cvis.htm">http://www.ertico.com/en/activities/efficiency\_environment/cvis.htm</a>

Congratulations to Steve Robinson who has been awarded a PhD degree for his dissertation entitled "The development and application of an urban link travel time model using data derived from inductive loop detectors". The thesis first examined issues of data quality for Inductive Loop Detector (ILD) data and travel time data collected from Automatic Number Plate Recognition (ANPR) cameras. This was followed by development of a new urban link travel time (ULTT) model based on the knearest neighbors approach. The ULTT model was then applied to the study of travel time variability. The thesis was supervised by Professor John Polak. Dr. Robinson is currently employed with Transport for London.

Jan-Dirk Schmöcker was a recipient of the Smeed Prize for the best PhD student paper at the 2006 Meeting of the Universities Transport Studies Group in Dublin. The title of the paper was: "An approach to dynamic transit assignment with consideration of capacity constraints".

**Bob Noland has received the Barry McNutt Award from the Transportation Research Board, Transportation Energy and Alternative Fuels Committees.** This is in recognition of the 2005 TRB paper that best met the standards and spirit fostered by Barry McNutt during his 35 years of transportation and energy policy analysis, for "Travel Demand Policies for Saving Oil During a Supply Emergency", co-authored with William A. Cowart and Lewis M. Fulton.