



Transportation Science and Logistics Society

President's Note

Tom Van Woensel

Happy Spring to all TSL Members! I hope the outlook of a nice summer is making all feel good!

Clearly, 2018 is a busy conference year. In June, we hope to see many of you in Italy for the Odysseus conference. The beautiful island of Sardinia will be hosting a wonderful program on Freight Transportation and Logistics. Meanwhile, the preparations for the INFORMS Fall conference are ongoing. The program is getting more and more finalized, with a number of very nice society-based talks. Additionally, the award committees are getting warmed up to start the evaluations for the best paper award, and the best dissertation award. If you did not submit yet, please do consider submitting as soon as possible. I am also happy to announce that we also

have an emerging countries dissertation prize, sponsored by the Indian company CCRL. Finally, the announcements for the Cross-regional grants will be announced. Keep an eye on the mailing list.



I am looking forward to working on the success of our society the coming months. Thanks to Karen as the past president for leaving the society in such a wonderful shape! See you all soon.

Tom

Past President's Note

Karen Smilowitz

It's been an exciting year for TSL!

It was wonderful to connect with so many TSL members in Houston at the annual INFORMS meeting and honor our members with a number of awards. Moshe Ben Akiva received the 2017 Robert Herman Lifetime Achievement Award in recognition of his contributions to modern transportation science, blending economics and engineering to bring new ideas and solutions to transportation problems. As the recipient of this award, Moshe gave a fantastic plenary talk in Houston. Thanks to the prize committee: Samer Madanat (chair), Cindy Barnhart, Ann Campbell, Amy Cohn, and Louis-Martin Rousseau. Mehdi Behrooz received the Dissertation

Award, with Honorable Mentions going to Marlin Ulmer and Jelmer Pier van der Gaast. Thanks to Halit Uster (chair), Sandra Eksioglou, Niels Agatz, Marco Nie, and Fernando Ordonez for reading so many dissertations. Alexandre Jacquillat and Amedeo R. Odoni received the Best Paper Award. This year, there were two SIG Outstanding Paper: Chiwei Yan and Jerry Kung (Air Transportation) and Tobias Harks, Felix G. König, Jannik Matuschke, Alexander T. Richter, and Jens



Schulz (Freight Transportation and Logistics). Thanks to the prize committee of Andres Medaglia (chair), Tom Van Woensel, Carolina Osorio, Guglielmo Lulli, and Thibaut Vidal. Maciek, Tom and I were thrilled to present the first TSL President's Service Award to Andres Medaglia in recognition of service "above-and-beyond" in multiple capacities for the society, as chair of the Best Paper Committee, as International Liaison and as a member of the TSL Cross-Region Grants Committee.

Finally, I would like to thank Cluster Chair Lavanya Marla and Vice-Chair Samitha Samaranayake and all the SIG chairs: Kevin Furman and Justin Goodson (Freight Transportation and Logistics); Song Gao and Joseph Chow (Urban Transportation Planning and Modeling); Max Shen, Pratik Parikh, and special guest co-chair Sadan Kulturel (Facility logistics); Andrew Churchill and Vikrant Vaze (Air Transportation); and Yingyan Lou and Alireza Khani (ITS).

Of course, the highlight of the year for our society was the fantastic success of the inaugural Triennial TSL Conference in Chicago, thanks to Conference Chairs Pitu Mirchandani and Maciek Nowak, along with committee members Mike Ball, Mike Hewitt, Warren Powell, and Barry Thomas. We had 206 participants from 26 countries presenting 132 talks, including plenaries from Uber and Manhattan Associates. Barry Thomas will serve as General Chair for the second TSL conference in 2020 – please reach out to Barry if you have thoughts for the next conference, and thank him for taking on this big role.

This past January, the sixth TSL Workshop took place in Hong Kong around the theme of "E-Commerce and Urban Logistics". Stein Wallace chaired the workshop, along with committee members Theo Cranic, Lei Zhao, Barry Thomas, Lawrence Leung, and Janny Leung. Please con-

sider submitting a proposal for the next workshop, to be held in 2019. We will send out solicitations shortly - we encourage you to reach out to us now if you are interested in hosting.

I have one more request in my role as Past President: please consider applying for the annual competition for Cross Regional Collaboration Grants. These grants were introduced a few years ago to increase collaboration across the geographic regions served by TSL and our partners at VeRoLog. Funds provide support for travel, lodging and other expenses related to international collaborations. The Cross-region Collaborative Grant is open to TSL members, located in at least two of the four TSL regions (North America, Central and South America, Europe and Africa, or Asia, Australia and New Zealand), who intend to collaborate on a research project. The Cross-region Doctoral Grant is open to any TSL member currently working towards a PhD who would like to spend time studying at an institution located outside of his/her home region. Calls for applications will be coming soon and applications will be due in August of this year. Please consider submitting an application.

In closing, thanks to all of our TSL members for another fantastic year. It's been a pleasure working with the TSL board, new and old: Past-past president Maciek Nowak, new president Tom Van Woensel, Secretary/Treasurer Lei Zhao and Communications Chair Mike Hewitt. We're excited to be joined by new officers: Vice president Alan Erera and Communications Chair Jan Ehmke.

Have a wonderful spring and summer, hopefully filled with intellectually-engaging conferences in beautiful locations.

Karen

TSL Workshop in Hong Kong

Impressions

The School of Decision Sciences and the Policy Research Institute of Global Supply Chain of HSMC partnered with INFORMS TSL to host the 6th INFORMS Transportation Science and Logistics Society Workshop from 7 to 10 January 2018.

Forty-eight researchers from different regions presented their recent work on the topics of green urban logistics, business module of urban logistics, revenue management, last mile delivery, e-commerce, collaborative logistics and ridesharing, vehicle routing, etc. In addition to academic presentations, the workshop also featured company visits hosted by Hutchison Ports and Power Hub Limited.

As the highlight of the workshop, an Industry Panel was organised by the Policy Research Institute of Global Supply Chain on 10 January 2018, bringing together business leaders, industry experts and academics to share thoughts and

insights on e-commerce and urban logistics in the region and worldwide. It attracted nearly 100 participants from overseas and local universities, and business leaders in China and Hong Kong.

After presentations by panelists, a panel discussion was held with Professor Jeff Yeung, Director, Knowledge Transfer Centre of the Chinese University of Hong Kong as the moderator. The panelists shared their views and exchanged ideas on the perspective of Hong Kong's logistics industry. Discussions were carried out on the different topics: how to manage the "Bullwhip Effect"; is the Cantonese old saying "If you do not study hard when you are young, you are going to join the transportation industry" still true for the younger generation today; what should Hong Kong do to maintain its international hub position; how to encourage students to join the logistics industry after graduation, etc.



2017 TSL Cross Region Doctoral Grant Winners:

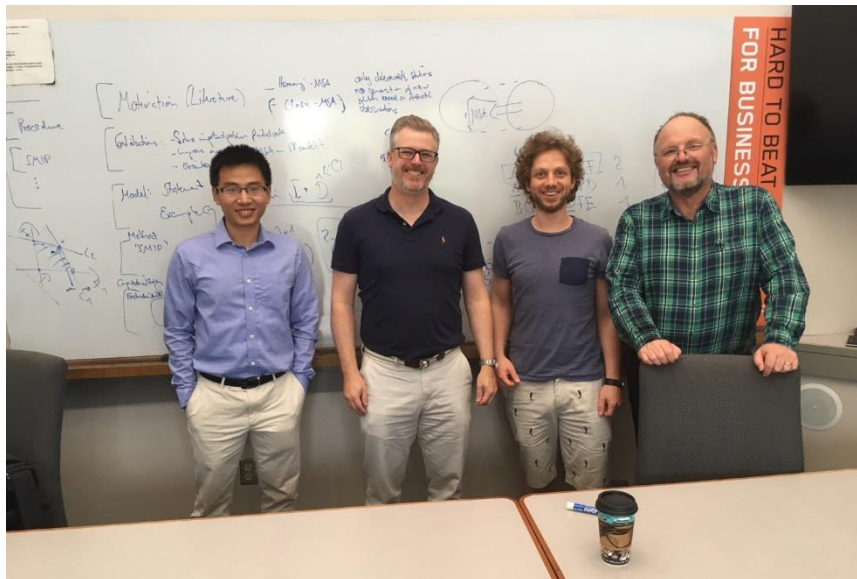
Yongjia Song, Barrett Thomas, Marlin Ulmer, and Stein Wallace

We would first like to thank TSL for the TSL Cross Regional Collaboration Grant. The premise of our proposal was to bring together seasoned researchers with young talent to explore questions in stochastic routing. To this end, our grant is a collaboration among Yongjia Song of Virginia Commonwealth University and Stein Wallace of NHH Norwegian School of Economics representing stochastic optimization and Marlin Ulmer of the Technical University of Braunschweig and Barrett Thomas of the University of Iowa representing stochastic routing.

The funding allowed the collaborators to meet in Iowa City, Iowa, USA, in July 2017, before last summer's inaugural TSL Conference. The visit included a review of initial results, outlining next steps, and general discussions of stochastics in routing problems. We expect to submit a paper in the next few weeks and a second by the end of the summer.

Our work together looks at urban service providers who operate in highly competitive markets with low margins. To keep their customer base and to grow market share, the providers need to ensure a high quality of service, for example, by allowing real-time tracking of service personnel. In addition to timely, good and cost-efficient service, consistency is becoming increasingly important. Consistency manifests in three dimensions; time, product, and personnel. The service needs to be conducted at roughly the same time every time. The (physical or service) product needs to be of the same high

quality every time, and the service needs to be conducted by the same person every time. The first dimension is often addressed with time windows in which the service takes place. The second dimension is ensured by standardized processes and by familiar service personnel. The third dimension also impacts the second and therefore is particularly important for a good customer relation. Knowing the personnel simplifies the service process and builds trust between customer and service personnel. As noted in one recent article, "Visiting a customer with the same driver repeatedly improves service quality because of the improving customer-driver relationship and the customized service. ... Consistency is also important for the drivers' satisfaction and productivity." Examples are manifold. In parcel delivery, the same driver knows the area and the customer as well as specific drop-off locations. Less-than-truckload drivers know the loading locations and processes as well as the responsible contact person. Field service personnel such as technicians know the facilities, have security clearance if necessary,



Hard at work in Iowa City in July 2017 -- From left to right: Yongjia Song, Barrett Thomas, Marlin Ulmer, and Stein Wallace

and are familiar with the machines to repair or maintain. Personnel consistency is also very important in the healthcare sector where patients and nurses need a very trustful relationship.

Achieving and maintaining driver-customer consistency is challenging. While service providers usually serve a set of regular customers over a long-term horizon, they also receive requests from additional on-demand customers on a daily basis. Many service providers serve these two types of customers with the same drivers. For other services, providers traditionally used separated fleets, however, they start consolidating these fleets, for example, in passenger transportation or parcel delivery, due to cost pressure and enabled by computational tools. Thus, for an increasing number of service providers, the challenge arises how to allow driver-customer consistency for the regular customers while serving many additional on-demand customers every day.

The problem at hand is a two-stage stochastic assignment and team orienteering problem (TSATOP). In the first stage, a set of regular customers is known. Each customer has a hard time window in which the service needs to take place. The second stage represents the on-demand customers and can be condensed to a single day. In the second stage, on-demand customers (with time windows) realize. Each of the on-demand customers has a reward. The decision in the first step is made about an assignment for the regular customers to vehicles. A decision in the second stage is about the selection of on-demand customers to be served, the assignment of the on-demand customers to the vehicles, and the routing of the vehicles through the assigned regular and on-demand customers. The objective is to maximize the expected revenue of on-demand customers under consideration of routing costs.

The TSATOP is challenging for two reasons. First, on the first stage assignment decisions need to be made under incomplete information. Second, decisions on the second stage require to (approximately) solve a deterministic team-orienteering problem with time windows. We address the two challenges as follows. To solve the second stage, we present a set partitioning formulation solved by a branch-and-price algorithm. For the first stage, we present a progressive hedging framework integrating a runtime efficient heuristic, adapted version of the multiple scenario approach (MSA).

We compare our policy with two types of benchmark heuristics in a comprehensive computational study. To analyze the performance of the MSA, we compare it with more advanced, computationally expensive progressive hedging strategies. We show that our MSA performs competitively while simultaneously significantly reducing runtime.

To analyze the value of our method for the business problem, we implement several heuristics representing practical policies. This allows us to analyze the costs of consistency, the benefit of serving both regular and on-demand customers in the same tour, as well as the costs of fixing the sequence of regular customers to reduce turmoil for the drivers. We derive the following managerial implications:

- The costs of consistency are high with about 22.9% increase on the average costs when consistency is ignored.
- Serving regular and on-demand customers with two separated fleets increases costs by 40.6%. Consolidation is therefore highly beneficial.
- Fixing the sequence of the regular customers (and therefore reducing the turmoil for the drivers) increases costs by only 16%. Providers may therefore consider this option to reduce stress for the drivers.

 CALL FOR PAPERS

 Issue of Transportation Science on
 Urban Freight Transportation &
 Logistics

Submission Deadline: June 29, 2018

Freight Transportation and Logistics systems are essential in supporting human social and economic activities, particularly so in urban areas. They are under significant pressure, however, not only to perform but also to change in their business and operational models. They must continue to aim for the highest levels of efficiency, profitability, and competitiveness, as well as for a continuous reduction in their environmental footprint and consumption of fossil energy. They must face the challenge of significant demand increase and evolution resulting from, on the one hand, the continuous growth of the urban population and, on the other hand, the explosion of on-line shopping accompanied by an apparent willingness of customers to pay for fast delivery. As witnessed at the recent 6th INFORMS Transportation Science and Logistics Society Workshop on E-Commerce and Urban Logistics, which took place January 7-10, 2018 in Hong Kong, very intense and rich research efforts in Operations Research and Transportation Science are being deployed to answer these challenges.

The focused issue on *Urban Freight Transportation & Logistics* intends to reflect these trends, efforts, and results. The aim is to present original, cutting-edge contributions – methodological and theoretical developments, as well as innovative and insight-provoking applications – that address a wide variety of issues in the modeling, planning, and management of freight transportation and logistics systems in urban area. Topics of interest include, but are not restricted to:

- City logistics, hyperconnected systems, last-mile logistics;
- Network design and planning;
- Service network design;
- Vehicle routing, scheduling, and dispatching;
- Emerging and evolving business and operational models;
- Terminal management;
- Intelligent transportation systems for freight transportation and logistics;
- Integrated planning of people and freight transportation systems;
- Integration of new technology.

Submissions are open to all, independently of participation in the TSL Society workshop. All contributions will be peer reviewed according to the usual standards of the journal.

Submission: Please submit your manuscript online via ScholarOne Manuscripts at mc.manuscriptcentral.com/transci. When choosing Manuscript Type in Step 1 of the submission procedure, enter “Special Issue – Urban Freight Transportation”, otherwise your submission will be handled as a regular manuscript.

The instructions to authors can be found on the [Transportation Science homepage](#).

Guest Editors:

- Teodor Gabriel Crainic, Université du Québec à Montréal and CIRRELT, Canada
TeodorGabriel.Crainic@cirrelt.net
- Stein W. Wallace, NHH Norwegian School of Economics, Bergen, Norway
stein.wallace@nhh.no
- Lei Zhao, Tsinghua University, Beijing, China
lzhao@tsinghua.edu.cn

Call for Nominations

TSL Dissertation Prize

Nominations are invited for 2018 TSL Dissertation Prize Competition, sponsored by the INFORMS Society on Transportation Science and Logistics. This award is the oldest and most prestigious honor for doctoral dissertations in the transportation science and logistics area. The award is accompanied by a \$500 honorarium for the winner. In addition, the winner and the recipient of an honorable mention (if any) each receives an 8x10 plaque announcing the award.

The following criteria will be used in judging candidate dissertations:

- Fundamental contribution and originality of the ideas or methods.
- Practical importance or applicability in solving important real problems.
- Clarity and excellence of the exposition.

Eligible doctoral dissertations are those completed and submitted between June 1, 2017 and May 31, 2018 in the general area of transportation science and logistics.

To be considered, a dissertation must be nominated by the thesis supervisor, who should submit the following items, all electronically in Adobe PDF format with the shown filenames:

- An electronic copy of the letter of nomination from the dissertation supervisor supporting the submission and stating his/her assessment of why the thesis is worthy of the award (candidate name-NL.pdf),
- An electronic abstract of 300 words without formulas or mathematical notation (candidate name-SA.pdf),

- An electronic copy of the extended abstract (3-5 pages), separate from the thesis (candidate name-EA.pdf), and
- An electronic copy of the dissertation (candidate name-D.pdf)

The above documents should be submitted online using this [URL](#). A password can be set optionally if additional documents are to be uploaded in subsequent steps.

Once you have completed your submission, please send an e-mail to d.mattfeld@tu-bs.de indicating the name of the candidate. The deadline for receipt of submissions is June 30, 2018. The recommendations of the judges will be announced at the 2018 INFORMS Annual Meeting during the TSL Society business meeting.

2018 Committee

Dirk C. Mattfeld

Business Information Systems Eng., Technische Universität Braunschweig
d.mattfeld@tu-bs.de

Sandra Eksioğlu

Industrial Engineering, Clemson University

Emma Frejinger

Dept. of Computer Science and Operations Research, Université de Montreal

Dimitri Papageorgiou

Corporate Strategic Research, ExxonMobil Research and Engineering Company, Annandale, New Jersey

Lei Zhao

Department of Industrial Engineering, Tsinghua University

Call for Applications

TSL Best Paper Award

The TSL Best Paper Award is given once a year to an outstanding paper in the field of transportation science and logistics. The paper must have been published in a refereed journal and must present innovative approaches for solving complex problems in transportation and/or logistics, with an emphasis on operations research and quantitative methods. Any author must submit only one of his/her eligible papers. In addition, no individual may be a co-author on more than two papers submitted to the competition. A paper is eligible for the competition if

- its main topic is related to the field of transportation science and logistics;
- it is written in English; and
- it has been published or appears in pre-print form online through the publishing agency, between June 1, 2015 and May 31, 2018. In the case of papers that are only available in pre-print form online at the time of consideration, the online publication date must be easily verifiable.

All topics related to the field of transportation science and logistics will be considered, including, but not being limited to:

- airline operations;
- facility logistics;
- freight;
- Maritime logistics;
- intelligent transportation systems;
- transit;
- urban transportation planning methods;
- vehicle routing.

The winning paper will be announced at the TSL business meeting to be held during the annual INFORMS meeting in November (in Phoenix, AZ). The authors of the winning paper will share

a prize of \$800, and each will receive a certificate.

The Best Paper Award committee will also select and recommend submissions for the Special Interest Group (SIG) outstanding paper awards. Upon submission, state the SIG that best fits the topic of the paper (see list of [SIGs](#)).

To submit a paper for the 2018 competition, one of the authors must email the paper, along with a short letter (maximum 2 pages) describing the merits of the paper, to the Chair of the TSL Best Paper Award Committee, on or before June 1, 2018. Please use the following email address: t.v.woensel@tue.nl (Subject: TSL Best Paper Award Application / Applicant name).

2018 Committee Chair

Tom Van Woensel, Ph.D.

Professor of Freight Transport & Logistics

School of Industrial Engineering

Eindhoven University of Technology

Eindhoven, The Netherlands

t.v.woensel@tue.nl

The other members of the Committee are:

Carolina Osorio, Ph.D.

Associate Professor

Civil and Environmental Engineering

Massachusetts Institute of Technology

Cambridge, MA, U.S.A.

Harilaos N. Psaraftis, Ph.D.

Professor of Management Science

Department of Management Engineering

Technical University of Denmark

Copenhagen, Denmark

Zuo-Jun (Max) Shen, Ph.D.

Chancellor's Professor

Department of Industrial Engineering and OR

Department of Civil and Environmental

University of California

Berkeley, CA, U.S.A.

Vikrant Vaze, Ph.D.

Assistant Professor of Engineering

Thayer School of Engineering

Dartmouth College

News and Notes

Catherine Cleophas

Transportation Cluster, Informs International Meeting –Taipei, 17-20 June 2018. The INFORMS International Meeting next year will be held in Taipei on 17th to 20th June, 2018. This will be the first time that the International Informs Meeting will be held in Taiwan. The conference will be held at the Taipei International Convention Center in Taipei 101, which was the world's tallest building (until 2010). For more information about the conference, see [here](#).

The Chair of the "Transportation" cluster, Janny Leung, invites you to organize a session Presentations on all aspects relating to Transportation Science and Logistics are welcome. If interested, please e-mail jleung@se.cuhk.edu.hk.

NHH Summer course on Rural Logistics. The course is offer at NHH Norwegian School of Economics by the Department of Business and Management Science

Logistics planning in rural areas, such as the High North, is very different from logistics planning in cities and densely populated areas. This course on rural logistics, focused on areas with a low density of people, long distances and difficult access conditions. The logistic issues related with rural areas are not well cover by the existing literature, for example timing of services is much more important than capacity - the bus is never full, but IS there a bus? We will focus on developing planning models for logistics when distances are vast, environmental uncertainties high, and connectedness is more important than capacity (contrary to city logistics). The course will be open to both master and PhD students. For more information, contact Julio C. Góez at julio.goez@nhh.no.

This course has six modules:

- Introduction to rural logistics
- Industrial logistics in remote areas
- Maritime transportation

- Healthcare in underserved areas
- Distribution in rural areas
- Collaborative logistics

Course Lecturers

- Marilène Cherkesly, UQAM
- Teodore Garbriel Crainic, UQAM
- Kjetil Fagerholt, NTNU
- Mario Guajardo, NHH
- Marie-Ève Rancourt, HEC Montréal
- Stein W. Wallace, NHH

The Second Risking Star Workshop – The Analytical Relationship between Mobility & Communications. You are cordially invited to attend the above captioned Chan Wui & Yunyin Workshop in the highly-rated Hotel Belvedere at Bellagio, Italy from Sunday 9th of June 2019 through Saturday 15th 2019 June 2019. Selected participants will be reimbursed for their regular travel expenses and be offered an opportunity to publish their contributed papers in the prestigious "Networks and Spatial Economics" journal by Springer. For details, see [here](#).

New E-Fulfilment Website. Based on their research project on e-fulfillment of attended home deliveries, Catherine Cleophas and Jan Ehmke have created an overview of related research at www.efulfillmentresearch.org. They summarize the development of research in this field and introduce an e-fulfillment simulation laboratory. Interested colleagues are invited to have a look and send comments to info@efulfillmentresearch.org for any suggestions, e.g. to name missing relevant work.

Kevin Tierney, formerly Assistant Professor in the department of Business Information Systems at the University of Paderborn, started a position as a tenured, full professor for "Decision and Operation Technologies" in the Faculty of Business Administration and Economics at Bielefeld University as of April 1, 2018

About Us

TSL Officers 2018

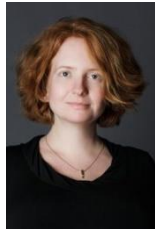
President	<u>Tom van Woensel</u>	Cluster Chair INFORMS 2018	<u>Samitha Samaranayake</u>
Vice-President/President Elect	<u>Alan Erera</u>	Newsletter Editor	<u>Catherine Cleophas</u>
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Past President	<u>Karen Smilowitz</u>		

Special Interest Groups

Freight Transportation and Logistics	<u>Justin Goodson</u> (C), <u>Sandra Eksioglu</u> (VC)
Urban Transportation Planning and Modeling	<u>Joseph Chow</u> (C), <u>Changhyun Kwon</u> (VC)
Facility Logistics	<u>Pratik J. Parikh</u> (C), <u>Larry Snyder</u> (VC)
Intelligent Transportation Systems	<u>Alireza Khani</u> (C), <u>Qing He</u> (VC)
Air Transportation	<u>Vikrant Vaze</u> (C), <u>Andrew Churchill</u> (VC)

International Liaisons

Europe and Africa	<u>Jorge Mendoza</u>
Americas	<u>Cristián Cortés</u>
Asia, Australia, and New Zealand	<u>Debjit Roy</u>



To suggest items for future newsletters,
contact
Catherine Cleophas c.cleophas@lancaster.ac.uk
or Jan Fabian Ehmke at jan.ehmke@ovgu.de.

