



ANNUAL REPORT 2018

University of Illinois at Chicago ITE Student Chapter

Institute of Transportation Engineers
ANNUAL REPORT OF STUDENT CHAPTER ACTIVITIES
From April 1, 2018 to February 28, 2019
STUDENT CHAPTER AT *THE UNIVERSITY OF ILLINOIS AT CHICAGO*

1. STUDENT CHAPTER OFFICERS

President: Ali Shamshiripour

Vice President: Ehsan Rahimi

Treasurer: Amir Bahador Parsa

Secretary: Sudheer Ballare

2. STUDENT CHAPTER MEMBERSHIP

Number of Student Chapter members: 19

Number of Student members of Institute: 10

Number of Students eligible to be a Student member of the Institute: approx. 100

Number of faculty members who are current ITE members: 1

3. INFORMATION ON TRANSPORTATION ENGINEERING ENROLLMENT

Number of undergraduate students (Sophomore - Senior years) in your academic department.

Full time: approx. 70 Part time: Nil

Does your curriculum allow an undergraduate student to major or minor in Transportation? **No**

Number of graduate students in Transportation.

Full time: approx. 15 Part time: Nil

4. SUMMARY OF STUDENT CHAPTER ACTIVITIES

Please see attached supplemental report.

5. ROSTER OF STUDENT CHAPTER MEMBERS

Please see attached member roster.

Report submitted by:



Name: Ali Shamshiripour
ITE Student Chapter at UIC
President
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March 2, 2019

Contents approved by:



Name: Dr. Bo Zou
ITE Student Chapter at UIC
Faculty Advisor
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March 2, 2019

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President's Message

It is among my greatest privileges to serve the ITE Student Chapter at UIC, a student organization of great potentials for bringing together different pieces of the puzzle of transportation engineering society. To my view, the chapter provides the graduate students of UIC with excellent opportunities of developing proper linkages with their fellows, and the undergraduate students with the unique opportunity of gaining a clearer understanding of specific challenges and beauties of the field.

ITE Student Chapter at UIC experienced another rewarding year during 2018, thanks to the non-stop supports we received from our faculty advisor, Dr. Bo Zou, and to his vision. The chapter also owes a lot to the CME department head, Prof. Kouros Mohammadian, for his continued and honest support. Also, we owe our achievements to the power of teamwork and to the efficient brainstorming sessions the board has had. Not least, I am grateful to the last student board for their continued support for making the transition period smoother.

Within the past months of activities, the chapter organized different seminars hosting outstanding scholars from different schools, including Prof. Chandra Bhat from University of Texas at Austin. Our board and student members had active presence in well-recognized conferences such as TRB and INFORMS; many of them also presented original research, both as lecture sessions and posters. The board and student members also won several scholarships and awards, including the George Krambles Transportation Scholarship, College of Urban Planning and Public Affairs, the University of Illinois at Chicago. Also, it was an honor to see the recipients of this year's IL-ITE Graduate Student Scholarship and the IL-ITE Student Paper Award both being a member of ITE Student Chapter at UIC.

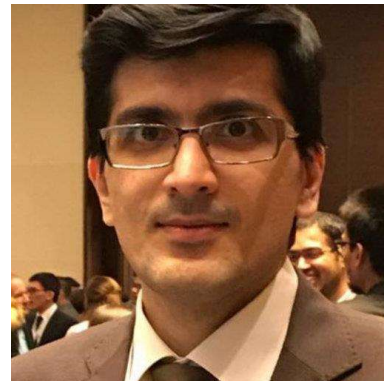
At the end, I believe this was just a start for the ITE Student Chapter at UIC; an even more flourishing year for the chapter is yet to come.

Ali Shamsheiripour

Ali Shamsheiripour

President, ITE Student Chapter at UIC

2018-2019



2018 Lookback

Sr. No.	Activity	Date
Technical Activities		
1	Seminar – Illinois Tollway (Paul Kovacs, P.E.)	03/16/2018
2	Seminar - Travel Behavior Implication of Automated Vehicles (Dr. Yoram Shiftan)	04/06/2018
3	Seminar - Infrastructure Resilience: From Concept to Performance to Decisions (Dr. Sue McNeil)	04/27/2018
4	Seminar - On Willingness to Share Trips in an Autonomous Vehicle Future (Dr. Chandra R. Bhat)	09/21/2018
5	Seminar - Leveraging network structure in covering path problems: An application to school bus routing (Dr. Karen Smilowitz)	10/26/2018
Executive Board Meetings		
	Meeting 1	10/25/2018
	Meeting 2	01/15/2019
	Meeting 3	01/22/2019
Conferences		
	Transportation Research Board (TRB) 98th Annual Meeting 2019	01/13/2019
	INFORMS 2018	11/04/2018
	15th International Conference on Travel Behaviour Research	07/15/2018
Involvement with ITE		
	IL ITE Student Day 2018	03/02/2018

Organization: About the ITE Student Chapter at UIC

ITE Student Chapter at UIC is a group of students interested in entering the field of transportation planning and engineering. The chapter is organized and operated by students under the supervision of the faculty at the Department of Civil and Materials Engineering (CME) at the University of Illinois at Chicago. The Chapter introduces students to the transportation profession and promotes the advancement of the profession by fostering close association of students with practicing engineers, educators and researchers from other institutions, and local and national chapters of ITE. The Chapter also aims to develop professional spirit, acquaint students with topics of interest in transportation, and promote common interests among students. The ITE Student Chapter at UIC belongs to the Illinois Section Institute of Transportation Engineers. All full-time UIC students in good academic standing are welcome to become members of the ITE Student Chapter at UIC. Membership in the ITE Student Chapter at UIC is free.

Figure 1. illustrates the current organization structure of the ITE Student Chapter at UIC.

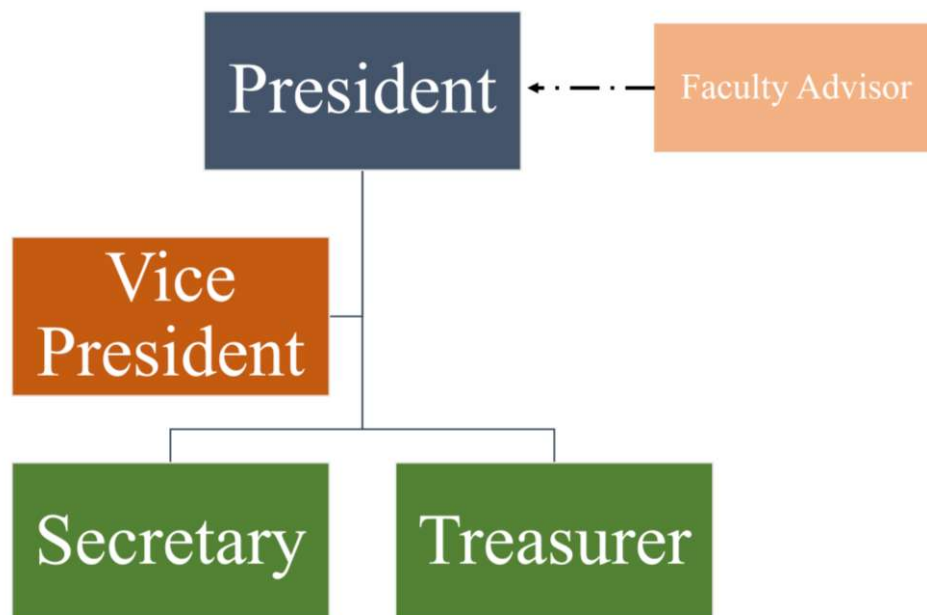


Fig 1: ITE Student Chapter at UIC Executive Board structure

Organization: Meet the Executive Board

Faculty Advisor – Dr. Bo Zou

Dr. Zou is an Assistant Professor in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). Dr. Zou is affiliated with the Center for Supply Chain Management and Logistics, UIC Urban Transportation Center, the National University Rail Center, the Center of Excellence for Airport Technology.



President – Ali Shamshiripour

Ali Shamshiripour is a PhD graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). His research interests include (a) Application of advanced artificial intelligence techniques to transportation engineering, (b) Transportation demand modeling, and (c) Transportation multi-agent computer simulations.



Vice President - Ehsan Rahimi

Ehsan Rahimi is a PhD graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). His research interests include (a) Transportation resilience, (b) Transportation demand modeling and (c) Machine Learning and Big Data Analytics.



Treasurer - Amir Bahador Parsa

Amir Bahador Parsa is a PhD graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). His research interests include (a) Transportation Demand Modeling and Forecasting Travel Behavior (b) Machine Learning and Big Data in Transportation (c) Traffic Simulation and Modeling Environmental Impacts.

**Secretary – Sudheer Ballare**

Sudheer Ballare is a PhD graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). His research interests include (a) Urban Logistics, (b) Operations research and (c) Intelligent and sustainable transportation systems.



Technical Activities: Conferences

Transportation Research Board (TRB)

The Transportation Research Board (TRB) 98th Annual Meeting was held January 13–17, 2019, in Washington, D.C. More than 13,000 transportation professionals from around the world attended the conference. The conference program covered all transportation modes, with more than 5,000 presentations, addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions.

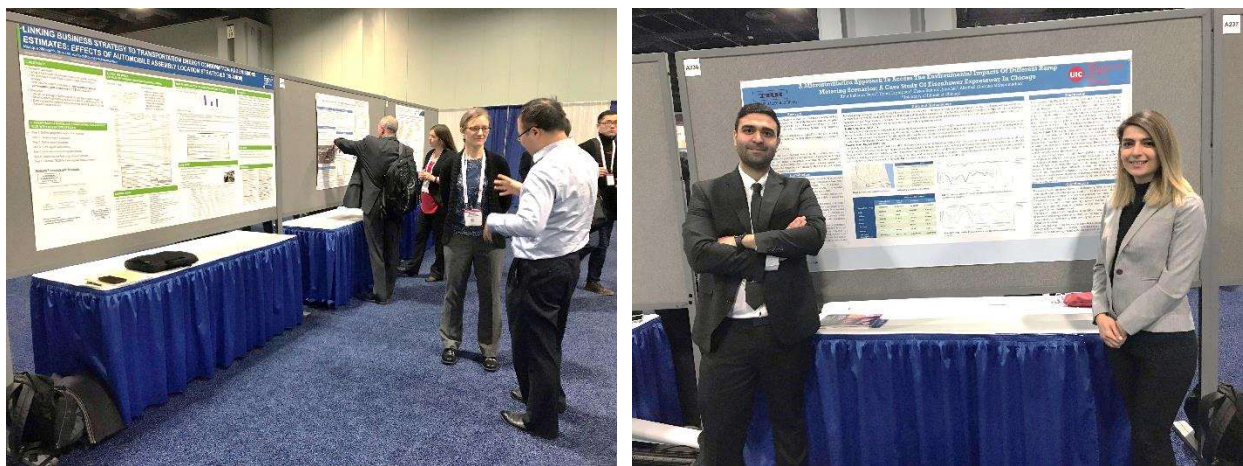


Fig 2: ITE Student Chapter at UIC members in action at TRB 2019

INFORMS

The INFORMS 2018 Annual Meeting took place in Phoenix, Arizona, November 4-7, 2018. The INFORMS Annual Meeting, with more than 1,000 sessions and over 5,000 papers, covered the broad landscape of Operations Research and advanced Analytics research and practice.



Fig 3: INFORMS 2018 (image courtesy: INFORMS).

15th International Conference on Travel Behavior Research

The 15th International Conference on Travel Behavior Research took place in Santa Barbara, California, July 15-19, 2018. The conference theme reflects the great progress we made collectively in developing tools to understand and map the fundamental elements of travel behavior. The plethora of conference topics demonstrate the wide spectrum of applied and fundamental areas that we impact with our research.

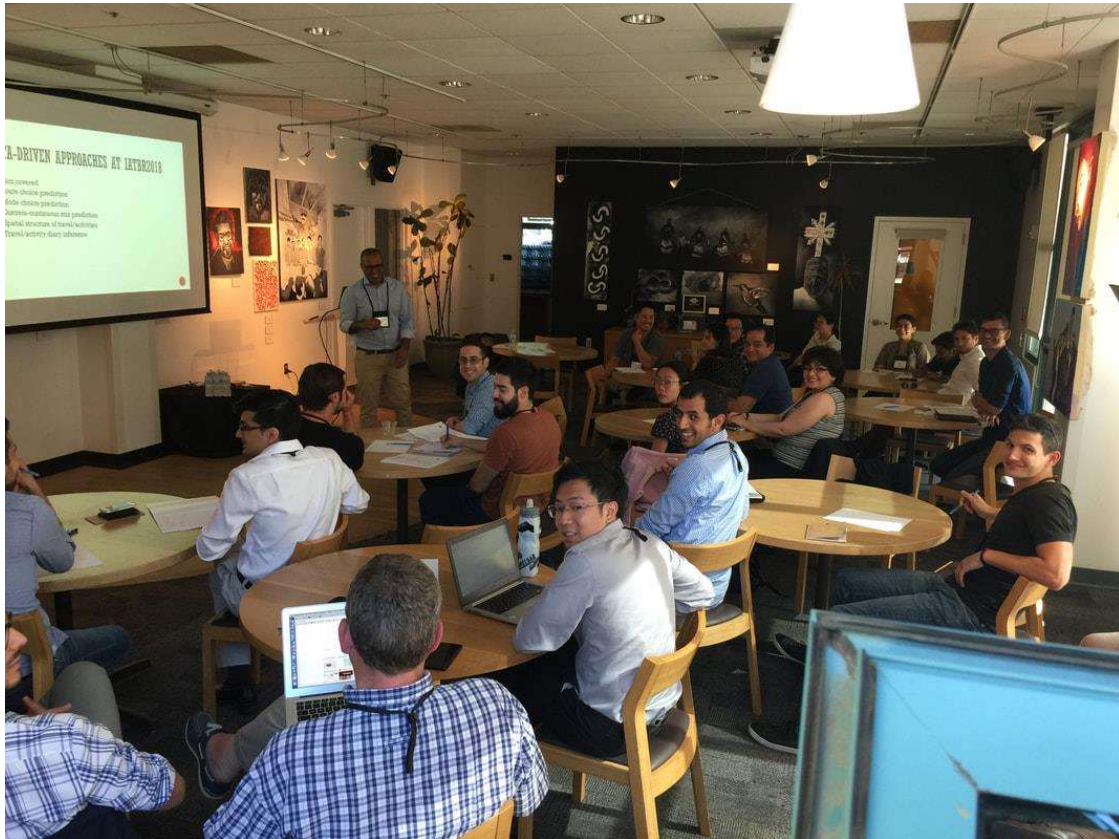


Fig 4: 15th International Conference on Travel Behavior Research

Technical Activities: Seminars

Seminar – Illinois Tollway (Paul Kovacs, P.E)



Mr. Kovacs is the Chief Engineering Officer for the Illinois Tollway and is responsible for the policies, practices and procedures of the Engineering Department, which oversees all design and construction operations on the agency's 294-mile system of roadways serving more than 1.6 million daily users in Northern Illinois. He introduced the 15-year, \$14 billion capital program, *Move Illinois: The Illinois Tollway Driving the Future*.

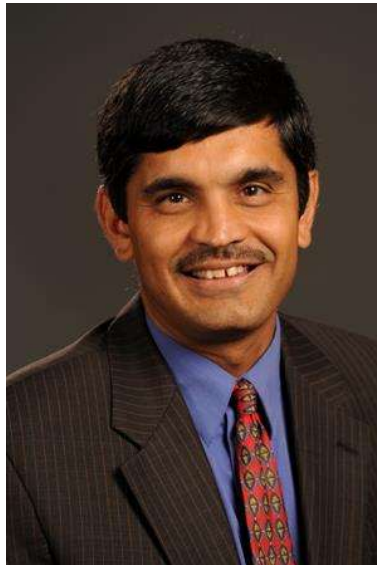
Seminar - Travel Behavior Implication of Automated Vehicles (Dr. Yoram Shiftan)

Dr. Yoram Shiftan is a Professor of Civil and Environmental Engineering in the Technion, and the head of Technion Transportation Research Institute, currently an Israel Institute Visiting Faculty at Northwestern University. Prof. Shiftan teaches and conducts research in travel behavior with a focus on activity-based modeling and response to policies, the complex relationships between transport, the environment and land use, transport economics and project evaluation. Prof. Shiftan is the editor of Transport Policy and was the chair of the International Association of Travel Behavior Research (IATBR). The introduction of fully automated vehicles will catalyze changes in travel behavior and activity participation. Automated vehicles may affect the value of travel time, the amount of travel time, and the quantity and type of vehicle purchases. Additionally, automated vehicles may make travelers willing to commute and travel longer distances, increasing the accessibility of activities that are further away, and impact long term life decisions such as where to live and work, thereby impacting land-use, necessitating additional planning. His presentation discussed the travel behavior implications of fully automated vehicles, the methods to model them, and some initial results and recommendations. The presentation was based on three workshops co-organized by the author on this topic, the 2015 International Association of Travel Behavior (IATBR) conference, and the 2016 and 2017 Automated Vehicle Symposium.

Seminar - Infrastructure Resilience: From Concept to Performance to Decisions (Dr. Sue McNeil)

Dr. Sue McNeil is Professor of Civil and Environmental Engineering and Public Policy and Administration at University of Delaware. She serves as the department chair and is also a Core faculty member in the Disaster Research Center at University of Delaware. Her research and teaching interests focus on transportation infrastructure management. Her most recent research includes the impact of natural hazards and climate change on physical infrastructure and asset management with particular emphasis on resilience.

Interest in infrastructure resilience is growing as extreme weather events threaten, damage and destroy our transportation infrastructure and states, regions and communities have to prepare for then recover from these events. The American Society of State Highway and Transportation Officials' (AASHTO) definition of resilience, the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events, captures the concept. Drawing on a series of case studies that apply measures of resilience to specific investment scenarios, Dr. Sue McNeil illustrated the challenges experienced in interpreting the impacts of maintenance and inspection decisions and demonstrate how the asset management framework can connect these concepts. The results show that different measures and indicators are applicable for different types of decisions.

Seminar - On Willingness to Share Trips in an Autonomous Vehicle Future (Dr. Chandra R. Bhat)

Dr. Chandra R. Bhat is the Director of the Data-Supported Transportation Operations and Planning (D-STOP) Tier 1 USDOT University Transportation Center and the Joe J. King Chair in Engineering at The University of Texas at Austin, where he has a joint appointment between the Department of Civil, Architectural and Environmental Engineering (CAEE) and the Department of Economics. Bhat is a world-renowned expert in the area of transportation and urban policy design, with far reaching implications for public health, energy dependence, greenhouse gas emissions, and societal quality of life. From a travel behavior perspective, two essential elements to the adoption of shared rides are individuals' acceptance of increased travel times associated with pick-up/drop-off of other passengers and their comfort levels with sharing the same vehicle with strangers. The current study develops the notion of willingness to share (WTS), which represents the money value attributed by an individual to traveling alone compared to riding with strangers, to investigate the adoption of shared rides. Results show that users are less sensitive to the presence of strangers when in a commute trip compared to a leisure-activity trip. We also observe that the travel time added to the trip to serve other passengers may be a greater barrier to the use of shared services compared to the presence of strangers.

Seminar - Leveraging network structure in covering path problems: An application to school bus routing (Dr. Karen Smilowitz)



Dr. Karen Smilowitz is the James N. and Margie M. Krebs Professor in Industrial Engineering and Management Science at Northwestern University. Dr. Smilowitz is an expert in modeling and solution approaches for logistics and transportation systems in both commercial and non-profit applications, working with transportation providers, logistics specialists and a range of non-profit organizations.

In the face of critical budget cuts, many public-school districts are looking to reduce transportation expenditures and keep cuts away from the classroom. Our research team at Northwestern University has been exploring such challenges in partnership with Evanston / Skokie District 65, a preK-8 public school district north of Chicago. In this talk, I will provide a broad overview of the partnership and present our initial work on the School Bus Routing Problem (SBRP). The SBRP has been studied by the operations research community for over fifty years, identifying creative routing and scheduling approaches for school districts. The SBRP itself is a composite of five decision sub-problems: data preparation, bus stop selection, bus route generation, school bell time adjustment, and route scheduling.

Technical Activities: Webinars

List of webinars attended by ITE Student Chapter at UIC members:

1) TRB Webinar: Modeling the Relationship Between Vehicle Speed and Fuel Consumption – March 14, 2018

This webinar explored the relationship between vehicle speed and fuel economy as investigated by the U.S. Federal Highway Administration. This webinar described how to simulate real-world vehicle operations using driving cycles in order to improve vehicle operating cost estimations.

2) TRB Webinar: Technology Changes Influencing the Decline of Vehicle Emissions – April 25, 2018

This webinar highlighted emerging technologies and programs that are designed to mitigate emissions from vehicles. Presenters discussed hybrid-electric and fully electric vehicles, connected and autonomous vehicles, and the U.S. Federal Highway Administration's Alternative Fuels Corridor Program.

3) TRB Webinar: Who's Riding TNCs and What Does It Mean for Public Agencies? – May 15, 2018

This webinar explores how transportation network companies (TNCs) such as Uber and Lyft are affecting the use of public transit and personal automobiles in several regions by drawing on several sources, including one of the first uses of TNC trip origin-destination data.

4) TRB Webinar: Cell Phone Location Data for Travel Behavior Analysis – August 2, 2018

This webinar discussed the extent to which cell phone location data and associated products accurately depict travel. The presenters will provide guidelines on the use of the data, also referred to as call detail records (CDRs), to understand and model travel patterns and behavior.

Liaison: ITE Illinois Section, On campus

IL ITE Student Day 2018 (March 2, 2018)

The ITE Student Chapter at UIC successfully hosted the annual Student Day Career Fair + Luncheon for The Illinois Section of ITE (ILITE) on Friday, March 2, 2018. Student Day is a career fair and networking event targeted at Illinois transportation students and companies. The morning career fair session was attended by students from several Illinois universities, as well as representatives from seven companies. Students and employers were encouraged to discuss opportunities from full-time, part-time, and even internships during the event.



Fig 5: Highlights from the IL ITE Student Day 2018

Financial Report

Opening Balance (01/01/2018)		\$909.35
Income	IL section ITE (COF)	\$200.00
	<i>TOTAL Income</i>	<i>\$200.00</i>
Expense	Travel	\$0.00
	Services	\$77.49
	<i>TOTAL Expense</i>	<i>\$77.49</i>
Closing Balance (03/01/2019)		\$1031.86

Recognition



Fig 6: ITE Student Chapter at UIC member, Ali Shamshiripour, won the IL-ITE Graduate Student Scholarship for 2018-19



Fig 7: ITE Student Chapter at UIC member, Amir Bahador, won the IL-ITE Student Paper Award for 2018-19

Member Roster

Sr. No.	Last Name	First Name	Degree	Expected Graduation	
				Month	Year
1	Shamshiripour	Ali ¹	PhD. in Civil Engineering	May	2020
2	Rahimi	Ehsan ²	PhD. in Civil Engineering	May	2021
3	Parsa	Amir Bahador ³	PhD. in Civil Engineering	May	2021
4	Ballare	Sudheer ⁴	PhD. in Civil Engineering	May	2020
5	Ahamad	Tanvir	PhD. in Civil Engineering	May	2021
6	Briones	Diana	Masters in Civil Engineering	May	2020
7	Dana	Yousef	Bachelors in Civil Engineering	May	2018
8	Flowers	Anthony	Bachelors in Electrical Engineering	May	2018
9	Golshani	Nima	PhD. in Civil Engineering	May	2020
10	Shen	Hui	PhD. in Civil Engineering	May	2020
11	Lee	Dongwoo	PhD. in Civil Engineering	May	2020
12	Nazari	Noosheen	PhD. in Civil Engineering	May	2020
13	Noruzoliaee	Hossein	PhD. in Civil Engineering	May	2019
14	Choobchian	Pooria	PhD. in Civil Engineering	May	2022
15	Taghipour	Homa	PhD. in Civil Engineering	May	2021
16	Aladdin	Ismail	Masters in Civil Engineering	May	2020
17	Shaw	Jovaun	Masters in Civil Engineering	May	2020
18	Zeng	Bolun	Masters in Civil Engineering	May	2020
19	Wu	Shanli	Masters in Civil Engineering	May	2020

¹ indicates that the student is the President of the Student Chapter.

² indicates that the student is the Vice-President of the Student Chapter.

³ indicates that the student is the Treasurer of the Student Chapter.

⁴ indicates that the student is the Secretary of the Student Chapter.