

ANNUAL REPORT 2016-17

University of Illinois at Chicago ITE Student Chapter

Institute of Transportation Engineers
ANNUAL REPORT OF STUDENT CHAPTER ACTIVITIES
From April 1, 2016 to March 31, 2017
STUDENT CHAPTER AT *THE UNIVERSITY OF ILLINOIS AT CHICAGO*

1. STUDENT CHAPTER OFFICERS

President: Nabin Kafle

Vice President(s): Ramin Shabhanpour & Mohamadhosseini Noruzoliaee

Treasurer: Noosheen Nazari

Secretaries: Natalia Kuvakina & Sudheer Ballare

Webmaster: Sandeep Sasidharan

2. STUDENT CHAPTER MEMBERSHIP

Number of Student Chapter members: 15

Number of Student members of Institute: 17

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. 240 in CME Department 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. 20 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:



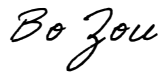
Name: Nabin Kafle

UIC ITE Student Chapter President

nkafle3@uic.edu

March 31, 2017

Contents approved by:



Name: Dr. Bo Zou

UIC ITE Student Chapter Faculty Advisor

bzou@uic.edu

March 31, 2017

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President's Message

2016 happened to be an important year for the ITE-UIC Chapter. The Chapter was revived in July with the efforts of our Faculty Advisor, Dr. Bo Zou, which proved to be an important milestone in uniting the Transportation Engineering students at UIC. Within the past 8 months of the Chapter's history, the ITE-UIC has significantly filled the void that was felt in the CME Department due to the lack of communication among the transportation students. ITE-UIC is now regularly organizing programs, seminars, scholarships, competitions, and social events to reach out to the graduate/undergraduate students.

Being the President of a newly revived group, I initially felt a lack of guidance and experience to conduct the routine activities. But I am very grateful to our Faculty Advisor and my Executive team who always supported my decisions and helped to implement all of our planned activities. I would also like to express my gratitude to Prof. Karl Rockne, the then interim head of CME department, who agreed to provide the required financial support to the ITE-UIC Chapter. Without the sanction of this budget, it would have been a major challenge to carry out any of our planned activities.

As a President, I take the pride to announce that within the first year of its revival, ITE-UIC managed to bring home all three of the Annual Student Scholarships awarded by the Illinois-ITE Section. Prof. Abolfazl Mohammadain, the head of the UIC CME department and a Transportation Engineering Faculty, in a personal meeting stated that these awards have historically been of great importance and he is proud that after many years, UIC yet again made its presence felt in the Midwestern ITE district by winning all three of the awards. Major activities carried out by the ITE-UIC Chapter in 2016 are:

- Participated in the ITE Midwest Student Leadership Summit, held in September at Iowa.
- Organized a seminar with Inshu Minocha from CDM Smith as the Speaker.
- Organized the First General Body Meeting for the Chapter.
- Organized a seminar with Dr. Ed Klotz from IBM Analytics as the Speaker.
- Sponsored students to attend the Informs Annual Meeting.
- Sponsored students to attend the TRB Annual Meeting.

Once again, I would like to acknowledge the immense support from the Executive board, Faculty Advisor, and the CME Department and hope to get the same support for the upcoming years. I hope all students from the Transportation Engineering show the same enthusiasm and ITE-UIC goes on marking its presence nationally and internationally.



Nabin Kafle

President, ITE-UIC Chapter
2016-2017



2016 -17 Lookback

Sr. No.	Activity	Date
Technical Activities		
1	Seminar - Climate Change, Resiliency and Sustainability: Perspectives on Engineering Challenges (Dr. Krishna Reddy)	09/16/2016
2	Seminar - Analysis of Transit Quality of Service and Employment Accessibility for the Greater Chicago Region (Mr. Inshu Minocha)	10/14/2016
3	Seminar - Industrial Careers in Mathematical Programming (Dr. Ed Klotz)	11/23/2016
4	Seminar - The crossroads of physical and virtual: the Internet as critical infrastructure (Michael Thompson)	12/02/2016
5	Seminar - The Interactions between E-shopping and Store Shopping in the Shopping Process for Search Goods and Experience Goods (Dr. Jason Cao)	02/10/2017
6	Seminar - Large-scale Model Exploration (Dr. Jonathan Ozik)	02/17/2017
Executive Board Meetings		
	Meeting 1	06/24/2016
	Meeting 2	06/29/2016
	Meeting 3	08/05/2016
	Meeting 4	08/17/2016
	Meeting 5	09/07/2016
	Meeting 6	10/14/2016
	Meeting 7	11/02/2016
	Meeting 8	10/09/2016
	Meeting 9	02/17/2017
Conferences		
	INFORMS 2016	11/13/2016
	Transportation Research Board (TRB) 96th Annual Meeting 2017	01/08/2017
Involvement with ITE		
	ITE Midwest Student Leadership Summit, Iowa	09/16/2016
	2017 Illinois ITE Student Day	03/03/2017
General Body Meetings		
	First General Body Meeting	10/26/2016

Organization: About the UIC ITE Student Chapter

UIC-ITE Student Chapter 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. 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 UIC-ITE Chapter 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 UIC-ITE student chapter. Membership in the UIC-ITE student chapter is free.

Figure 1. illustrates the current organization structure of the ITE-UIC Board.

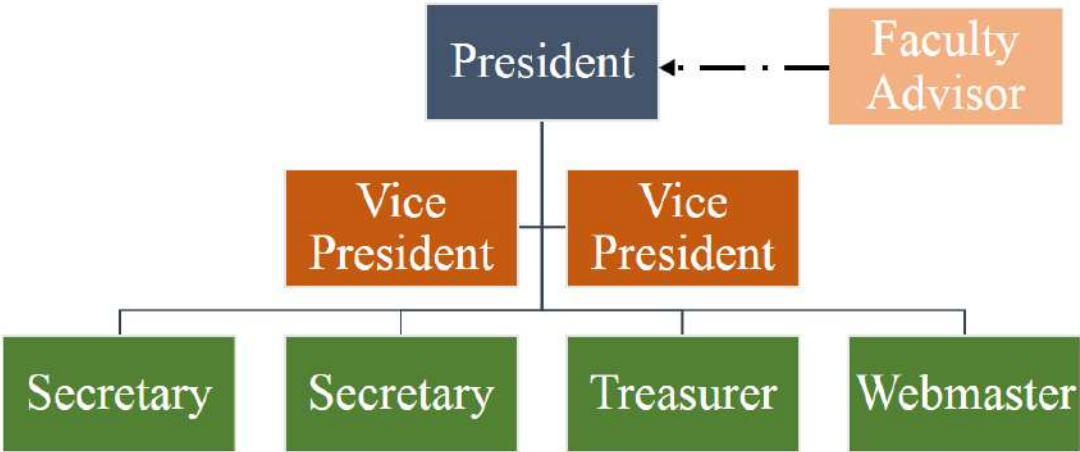


Fig 1: ITE-UIC Student Chapter Executive Board structure

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 – Nabin Kafle

Nabin Kafle 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) Logistics and Supply Chain Engineering, (b) Transportation planning & policy and (c) Machine Learning & Big Data Analytics.



Vice President - Ramin Shabanpour

Ramin Shabanpour 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) Activity-based Travel Behavior and Time Use Analysis, (b) Integrated Land Use, Transportation, and Environment Models and (c) Machine Learning and Big Data Analytics

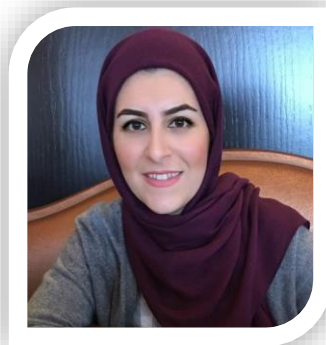


Vice President - Mohamadhossein Noruzoliaee

Mohamadhossein Noruzoliaee 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 operations research and game theory to transportation engineering, (b) Transportation network modeling and (c) Transportation systems modeling and analysis.

**Treasurer - Noosheen Nazari**

Noosheen Nazari is a PhD graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). Her research interests include (a) Modeling energy consumption behavior in activity-based framework, (b) Household vehicular decision modeling considering new technology: electric vehicle and (c) Operations research in infrastructure management.

**Secretary – Natalia Kuvakina**

Natalia Kuvakina is a Masters graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). Her research interests include (a) Transportation Planning and Demand Modeling, (b) Transportation Systems Analysis and (c) Travel Behavior Analysis.



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.



Webmaster – Sandeep Sasidharan

Sandeep Sasidharan is a Masters graduate student in the Department of Civil and Materials Engineering at University of Illinois at Chicago (UIC). His research interests include (a) Mobile computing, (b) Urban mobility and (c) Intelligent transportation systems.



Technical Activities: Conferences

Transportation Research Board (TRB)

The Transportation Research Board (TRB) 96th Annual Meeting was held January 8–12, 2017, in Washington, D.C. More than 12,000 transportation professionals from around the world attended the conference. The conference program covered all transportation modes, with more than 5,000 presentations in over 800 sessions and workshops, addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government and industry.

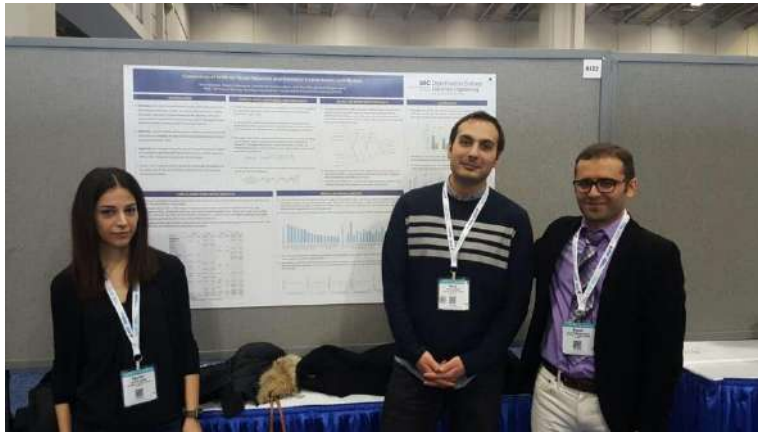


Fig 2: ITE-UIC Student Chapter member Nima Golshani at TRB 2017.

INFORMS

The INFORMS 2016 Annual Meeting took place in Nashville, Tennessee, November 13-16, 2016. The INFORMS Annual Meeting, with more than 1,000 sessions and over 5,000 papers, covers the broad landscape of Operations Research and advanced Analytics research and practice.



Fig 3: ITE-UIC Student Chapter President Nabin Kafle making a presentation at INFORMS 2016.

Technical Activities: Seminars

Seminar - Analysis of Transit Quality of Service and Employment Accessibility for the Greater Chicago Region (Mr. Inshu Minocha)

Mr. Inshu Minocha, who is working as a Transportation Planner at CDM Smith in their Chicago office, shared the methodology and findings from his Master's thesis topic on the topic, "Analysis of Transit Quality of Service and Employment Accessibility for the Greater Chicago Region". The research was focused on exploring the quality of the transit system in the Chicago region through a set of supply and demand-side indicators at the census tract level. It explores the quality of the transit system in the Chicago region through a set of supply- and demand-side indicators at the census tract level. A series of these indicators was mapped over the Chicago region at the census tract level. The paper also ranks census tracts on the local transit measures, as well as on the regional transit-based employment accessibility measures, and identifies those areas that are well off and worst off in regard to both types of indexes. Followed by this, Mr. Inshu presented excerpts from some of his current projects while working at CDM Smith, Inc. These include snapshots of project materials and discussion of upcoming trends and challenges in the tolling industry.



Fig 4: Mr. Inshu Minocha (CDM Smith) addressing the UIC-ITE members

Seminar - Industrial Careers in Mathematical Programming (Dr. Ed Klotz)

Dr. Klotz, Mathematical Programming Specialist at IBM, gave a seminar on Industrial Careers in Mathematical Programming. He has been involved in CPLEX development, training, documentation and support. Dr. Klotz, during the seminar, presented insights on different types of mathematical programming problems, associated algorithms and practical capabilities in solving these problems. He also talked about the foundational mathematics that is used on regular basis by explaining the application of mathematical programming in industries. There is a synergistic effect between the algorithm improvements in software and improvements in hardware. Some of the sources of the progress that Dr. Klotz mentioned were: chip speed improvement; more memory which enables better implementation, accurate and parallel computation; and creation of more challenging models with increased capabilities. Talking about the current capabilities, CPLEX can solve 10-50 million constraints with essentially unlimited number of variables with decomposition techniques like column generation. Although capabilities are reduced with quadratic expressions in the objective and constraints, CPLEX is still able to solve bigger problems. Dr. Klotz also presented a list of industrial applications where mathematical programming techniques are used.



Fig 5: Dr. Ed Klotz (IBM) addressing the UIC-ITE members

Technical Activities: Webinars

List of webinars attended by UIC-ITE student chapter members:

1) TRB Webinar: The Economic Costs of Unreliability in Freight and Truck Travel Time - February 15, 2017

This webinar demonstrated the survey methodology that was developed to estimate the value of travel time reliability for truck freight system users in order to assist in the evaluation of proposed highway infrastructure and operations investment.

2) TRB Webinar: Integrating Climate Change Resilience into Transportation Asset Management - October 13, 2016

In this webinar, various infrastructure experts (a) described the growing importance of climate change and extreme weather events in transportation agency decision-making, (b) identified trends and challenges with respect to the inclusion of climate change risks in asset management practices and (c) listed tools and methods to account for climate change and extreme weather risks in asset management systems.

3) ADB40 big data: Webinar on Model-Based Machine Learning - September 27, 2016

In this webinar, Daniel Emaasit (PhD Student of Transportation Engineering at UNLV) introduced Model-Based Machine Learning (MBML) and how it allows data scientists to address the uncertainty inherent to real-world machine learning applications. He also demonstrated how to implement MBML in a probabilistic programming language called Stan, using the RStan package.

4) TRB Webinar: Models Used in Air Quality Analysis – September 15, 2016

This webinar discussed specific model types generally used in the analysis of transportation-related air quality analysis of fleets. These include transportation analysis models, emission factor models, and dispersion models.

Liaison: ITE Midwestern District, On campus

ITE Midwest Student Leadership Summit, Iowa (September 14-16, 2016)

The ITE Student Leadership Summit (SLS), Iowa was a three-day long transportation engineering event held annually by the Western District of the Institute of Transportation Engineers. The 2016 summit, hosted by ISU's TSA and sponsored in part by ISU's Institute for Transportation (InTrans), attracted more than 80 students representing the Great Lakes and Midwestern ITE Districts. The SLS provides students a discussion forum of current and future developments of transportation and gives an opportunity to network with transportation professionals. During the three-day event, engineering professionals critiqued resumes, conducted mock interviews, and explored industry trends with students. Students were exposed to various activities, speakers, and workshops equipping them with tools to be leaders in the transportation engineering world.



Fig 6: UIC-ITE chapter member participating at the ITE Midwest Student Leadership Summit

ITE Student day at Illinois Institute of Technology Event

On March 3, 2017 Illinois Institute of Technology hosted an event, designed for college students majoring in Transportation-related fields. The event consisted of a career fair, featuring such companies as Dama Consultants, Gewalt Hamilton Associates Inc, AES Services, TranSmart Technologies, Inc, Christopher B. Burke Engineering, AECOM, Civiltech Engineering, Inc, Clark Dietz, followed by a luncheon with engineering professionals and company representatives.

The career fair attracted a significant number of students, mostly graduate. Besides the hosts IIT, the event was visited by UIC, U of I, and UW Madison students. The career fair went way beyond scheduled end time due to the continuously arriving students and a high interest shown by the recruiters. After the luncheon, the event was open for informal conversation with some of the recruiters and representatives from Cambridge Systematics, TranSystems, and CH2M Hill. The head of Midwestern District of ITE John Davis together with Ashley Hochstatter, Illinois Section ITE Student Affairs Director, were also present at the event, providing information about ITE to the interested students and hosting the luncheon.



Fig 7: ITE Student day at Illinois Institute of Technology Event

First General Body Meeting of UIC ITE chapter

After the renewal of local UIC ITE chapter, the First General Body Meeting was held on October 26, 2016. The main agenda for the meeting was to reintroduce Chapter to UIC students, explain general functions and resources provided by ITE society, and recruit new members. Two of the UIC faculty members were present at GBM – Prof. Karl Rockne, Civil and Materials Engineering Interim Department Head, and Prof. Bo Zou, Academic Adviser of UIC ITE Chapter. Prof. Rockne gave a short speech acknowledging the renewal of ITE university chapter and welcoming students. He encouraged the board and regular members to work on the growth of the chapter and guaranteed a full support of CME department. Prof. Zou followed his remarks also welcoming students and talking about ITE purpose and benefits that come with being a part of it.

UIC ITE chapter's president, Nabin Kafle, spoke in detail about ITE society and the Chapter, their goals and objectives. Nabin also dedicated a part of the presentation to the student benefits, such as a free chapter membership and a free first-year national membership, seminars and conferences, available to student member, and finally scholarships and general support of upperclassmen peers. As a reward to the most knowledgeable participants in the quiz organized at the end of the GM, the board gave away two Amazon gift cards. All participants were also provided with pizza and refreshments after the meeting.



Fig 8: First General Body Meeting

Financial Report

Opening Balance (08/22/2016)		\$0
Income	Departmental fund	\$2,000
	<i>TOTAL Income</i>	<i>\$2,000</i>
Expense	General body meeting (food)	\$187.15
	General body meeting (prize)	\$50
	Lunch with speaker (Inshu Minocha)	\$42
	Lunch with speaker (Dr. Ed Klotz)	\$47.61
	<i>TOTAL Expense</i>	<i>\$326.76</i>
Closing Balance (12/31/2016)		\$1,673.24

Recognition



Fig 9: ITE Scholarship winners ITE Illinois Chapter

Member Roster

Sr. No.	Last Name	First Name	Degree	Expected Graduation	
				Month	Year
1	Ahamad	Tanvir	PhD. In Civil Engineering	May	2021
2	Ballare	Sudheer*	PhD. In Civil Engineering	May	2020
3	Briones	Diana*	Bachelors in Civil Engineering	May	2018
4	Dana	Yousef*	Bachelors in Civil Engineering	May	2018
5	Flowers	Anthony	Bachelors in Electrical Engineering	May	2018
6	Golshani	Nima*	PhD. In Civil Engineering	May	2020
7	Johnson	Daniel*	Masters in Civil Engineering	May	2017
8	Kafle	Nabin*	PhD. In Civil Engineering	May	2017
9	Kothapalli	Nanditha*	Masters in Civil Engineering	May	2017
10	Kuvakina	Natalia*	Masters in Civil Engineering	May	2017
11	Lee	Dongwoo*	PhD. In Civil Engineering	May	2020
12	Nazari	Noosheen*	PhD. In Civil Engineering	May	2020
13	Noruzoliaee	Hosseini*	PhD. In Civil Engineering	May	2017
14	Patel	Ankur*	Bachelors in Civil Engineering	May	2018
15	Shabanpour	Ramin*	PhD. In Civil Engineering	May	2017
16	Shamsiripour	Ali	PhD. In Civil Engineering	May	2021
17	Ukil	Shubhayan*	Masters in Urban Planning	May	2017

* indicates that the student is a member of Institute of Transportation Engineers.