

1. UTA-ITE & ITS Student Chapter Message

The University of Texas at Arlington ITE/ITS Joint Student Chapter is pleased to present the annual report of 2021-2022 academic year. UTA-ITE chapter and UTA-ITS chapter jointly worked as a single student chapter this year because of insufficient student members due to the pandemic.

During 2021-2022 academic year, our student chapter provided different opportunities to get involved with ITE and ITS. The most important of them include conference support, monthly meetings, and inviting transportation professionals for speaker series. We also teamed up with ASCE and WTS for different events which will be discussed in detail. ITE/ITS supported its students with travel awards to conferences such as 2021 ITS Texas / TexITE Joint Meeting. Besides these meetings ITE/ITS members joined different virtual and in-person conferences this year. We would like to express our sincere thanks to Dr. Stephen Mattingly, faculty adviser of UTA-ITE/ITS chapter and also Dr. Jim Williams and Dr. Pengfei (Taylor) Li for gracious support and kind encouragement. Following table depicts organization structure of UTA-ITE/ITS group-

Student Chapter officers	
Date	3/01/2021-Present
President	Jobaidul Alam Boni
Vice President	Mehrdad Arabi
Treasurer	Farzana Rahman Chowdhury
Officer 1	Md. Mintu Miah
Officer 2	Peirong Wang
Officer 3	Saha Troyee

2. Student Chapter Membership

Number of Student Chapter members: 144

Number of Student members of Institute: 139

Number of Students eligible to be a Student member of the Institute: 139

Number of faculty members who are current ITE members: 5

3. UTA-ITE/ITS Activities Summary

3.1 ITE/ITS Guest Speakers in 2021-2022

Mr. Joel Leisch (October, 2021): UTA-ITE/ITS invited Mr. Joel Leisch for their monthly guest speaker meeting on October, 2021. He is a Transportation Planner and Engineer at Kittleson & Associates based on Portland. He also works as a consultant for Transoft Solutions providing professional development courses as well as input to Transoft's software development. He provide professional development courses in highway and traffic engineering related to freeways/interchanges, intersections and roundabouts. Joel has in-depth knowledge and experience in many facets of transportation planning and



traffic engineering. He is highly regarded as an expert in many technical areas. He has been responsible for the planning and design studies of more than 2,000 miles (3,000km) of freeways, toll facilities, and arterials including more than 900 interchanges and 2,000 intersections and roundabouts in major metropolitan areas in 28 states and five foreign countries. He shared his vast experience and knowledge with us on a presentation titled “Application of Human Factors in the Development of Geometry Design”.

Lauren Allan, P.E. and Jenny Prazak, P.E. (November, 2021): UTA-ITE/ITS, WTS and ASCE organized a joint speaker session on 10th November, 2021. We invited Ms. Lauren Allan and Ms. Jenny Prazak from Cobb, Fendley & Associates Inc. CobbFendley is a place where they emphasize on community relationships to help us design solutions that create stronger communities. Ms. Lauren Allan is an Experienced Project Manager with a demonstrated history of working within the heavy civil and transportation industries. Highly skilled in Utility Conflict Identification, Coordination, and Relocation, from planning to construction phases of large highway projects. Jenny Prazak is a licensed Professional Engineer with over 17 years of experience in a wide variety of civil engineering disciplines. She works as a Principal at Cobb, Fendley & Associates, Inc., and Project Manager in a municipal design and project review capacity. Her responsibilities range from underground franchise & municipal utility design, to drainage design, to acting as Consulting Engineer for several municipalities throughout the Dallas/Ft. Worth area. Both of them share their knowledge gained from their year long experience and encourage the young graduate into more civil engineering design practices.

Taylor Dixon (April, 2022): UTA-ITE/ITS organized a spring speaker session on 5th April, 2022. Mr. Taylor Dixon from Smart Drone was invited as a speaker for the session. He worked as a Smart drone Co-founder and Data Lead. He is experienced with a demonstrated history of working in the aviation and aerospace industry. Skilled in Image Processing/ SLAM, Electronic System Design, C++,Python, Robotics, and Sensor integration. He is also a Serial Entrepreneur & 3D Mapping Expert with Special Focus in Lidar Processing Software Development with 8 years’ experience of creating 3D Mapping Technology. He shared his knowledge about how their drones are doing revolutionary work in helping the surveyor. He gave us a presentation on “How it's made, what data to expect, and how to use it effectively”.

Mr. Daniel E Burnham (April, 2022): UTA-ITE/ITS organized a speaker session on 19th April, 2022. We invited Mr. Daniel E Burnham from City of Arlington. He is a Senior Engineer at City of Arlington. He is an Experienced Traffic Engineer with a demonstrated history of working in the municipal public works industry. Skilled in Traffic Engineering, Transportation Engineering, Roadway Engineering, and Project Management. As a Civil Engineer for the City of Arlington, he primarily managed various capital improvement projects. He worked on a range of projects from sidewalk and curb ramp projects to major arterial rebuilds and widenings to channel improvement projects. He managed the projects from initialization through the design phase to the completion of the construction phase including the final walkthrough and acceptance of the project by the City. During this time he was also able to avail myself of local training to obtain my Registered Accessibility Specialist License. As a result, He dealt with all ADA requests as they pertained to the City's Right-of-Way. He shared his knowledge on “ITS Infrastructure in Arlington/The Award Winning Cooper Street Deployment and What the City looks for in

a Graduate/Civil Engineer”.

3.2 Conference

2021 ITS Texas / TexITE Joint Meeting

ITE/ITS members including Jobaidul Alam Boni, Mehrdad Arabi and Peirong Wang with the professor Dr. Pengfei (Taylor) Li participated the 2021 ITS Texas / TexITE Joint Meeting in Dallas. It was a great place to meet the people of Transportation from Texas. For the first time UTA-ITE worked as a volunteer in organizing and collecting photo of the events. We also helped counting the ballots for ITE and ITS Board of Direction Elections. All of the students got grant from ITE/ITS to participate in this event.

Starting with the first day, after registration we visited Technical Tour: City of Dallas Traffic Management Center The City of Dallas has been working on upgrading its advance traffic management system since 2014 and finished all upgrades in 2021. It was followed by Technical Tour: McKinney Avenue Trolley and Barn later that day. Here McKinney Avenue Transit Authority (MATA) share their history, current operations, lessons learned, and future plans. Participants got a tour of the line, the maintenance facility, and headquarters. The most recent thirty years of operation has been a model for future operations of this type.

On following day we participated on different following exhibits on “ Connected and Autonomous vehicles”, “ITS Data and Research”, “ Innovative Intersection Design- Roundabouts and More”, etc. The award and lunch ceremony at the last day was a great finish to this awesome event. Here both ITE and ITS president had a speech about the leadership, their experience and future prospect and perspective of research on both topics. Several graduate students received their awards for their innovative research projects and having novel ideas. Two of our graduate students- “Mehrdad Arabi” and “Peirong Wang” received the ITS scholarship this year. It was great achievement for our ITE/ITS student chapter group.

2021 IEEE International Intelligent Transportation Systems Conference (ITSC)

Our ITE/ITS member Farzana Rahman Chowdhury and Slade Wang participated the online version of 24th 2021 IEEE International Intelligent Transportation Systems Conference (ITSC). It is the annual flagship conference sponsored by the IEEE Intelligent Transportation Systems Society. It welcomes articles and presentations in the field of Intelligent Transportation Systems (ITS), conveying new developments in theory, analytical and numerical simulation and modeling, experimentation, advanced deployment and case studies.

Farzana Rahman Chowdhury presented her work on “A Coordinated Adaptive Traffic Control Strategy Based on Phase Time Network”. In her work she used time-based coordination in an adaptive traffic



control system using in the phase time network. Peirong Wang presented his work on “An Integer Programming Formulation for Heterogeneous Traffic Dynamics and Assignment Modeling: A Multicommodity Network Flow Model in Space-Time Networks”. Peirong wang thinks with the connected automated vehicle (CAV) growing, their interactions with the human-driven vehicles will significantly change the traffic flow characteristics. To address this issue, they present an integer programming formulation for vehicle-oriented traffic dynamics model in space-time networks.

2021 Conference on Advancing Transportation Equity

Three ITE/ITS member along with the advisor Dr. Stephen P Mattingly attended the virtual version of Conference on Advancing Transportation Equity organized by Transportation Research Board. The conference featured all areas of transportation practice and research, including those that address links between transportation and housing, telecommunications, health, policing, or economic development. Participants represented a wide range of lived and professional experiences and discuss how diverse perspectives are included in policy development, project selection, and mitigation to advance transportation equity.

Jobaidul Alam Boni and Nitisha Gudipaty presented their work on “Transit Performance Measures for the Transportation Disadvantaged: An Equity Analysis”. The study focuses on access to opportunities at the block group level to assess the equity between EJ groups for minority races and ethnicities, zero-car and disabled. Using an equity lens, the study looks at the proportion of those served by transit who have timely access to jobs, education, healthy food, and healthcare. They concluded that introducing different alternative ‘First and Last Mile (FLM) strategies may serve these populations more effectively.

Mehrdad Arabi and Jobaidul Alam Boni presented their work on “ROLE OF TRANSIT AND AUTO-RELATED DEVELOPMENT IN ECONOMIC STATUS OF LARGE CITIES”. They think limited economic growth in poor communities hinders their ability to obtain properly designed roadways and public transit services that meet their transportation needs and transportation system improvements may occur more often for higher socioeconomic groups because they face greater congestion. They developed a SEM structure investigates the direct and indirect impacts of transportation-related variables on economic status of households.

CONFERENCE: TRB 2022

On January 9th , Dr. five ITE members attended “101st Transportation Research Board Annual Meeting”. The event took place at the Walter E. Washington Convention Center, in Washington, D.C. There were four posters presented at this year’s TRB by the ITE/ITS member. A poster by Jobaidul Alam Boni and Nitisha Reddy Gudipati titled “Transit Performance Measures for the Transportation Disadvantaged: An Equity Analysis” focuses accessibility of the public transportation among disadvantaged people in Dallas county and how different first and last mile radius strategies can help them. Mr. Mehrdad Arabi presented another interesting topic this year “The most critical network links based on road user vulnerability for hurricane evacuation”. He tried to identify one of the important factors during the



evacuation of category 4 and 5 cyclones.

Another great prospect of ITE/ITS Mr. Md Mintu Miah presented his work on checking the feasibility of machine learning techniques for the estimation of daily non-motorized bicycle volume. He compared the performance of statistical and machine learning algorithms with and without dimension reductions. The title of his presentation is “Estimation of Daily Bicycle Traffic Using Machine and Deep Learning Techniques”. Ms. Troyee Saha investigates the one of the most talked topic during the covid era- “Mobility Challenges of Vulnerable Older Adults during the COVID-19 Pandemic”. She tried to address and compare the current and previous situation of mobility of older adults by asking them different interview questions. TRB annual meeting has been always a great place for making new connections and friends. The ITE/ITS members attended multiple sessions and discusses the current and future topics of transportation.

3.3 Other achievements by UTA-ITE Member

Feature at Student Spotlight by National Institute for Transportation and Communities

Jobaidul Alam Boni was featured at the student spotlight by National Institute for Transportation and Communities (<https://nitc.trec.pdx.edu/news/student-spotlight-jobaidul-alam-boni-university-texas-arlington>). He worked on the NITC project “Evaluating Improved Transit Connections for Ladders of Opportunity”. He investigated the different strategies that can be used to provide access to all kind of population group.

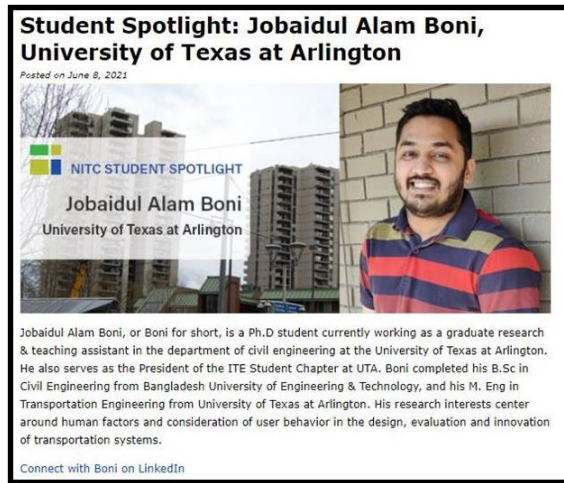
Dallas ITE Scholarship

The Greater Dallas Section of ITE provide annual scholarship to students who devoted their work Traffic/Transportation Engineering or Transportation Planning related activities. This year Md. Mintu Miah and Mehrdad Arabi from UTA-ITE/ITS got the scholarship for their outstanding work in transportation field.



(a)

(b)



(C)

Figure: (a) Student Receiving Award at 2021 ITS Texas / TexITE Joint Meeting, (b) Student attending TRB Meeting (c) Student featured in NITC newsletter