



SUMMARY OF 2017 UB NATIONAL SUMMER TRANSPORTATION INSTITUTE

August 14 – 18, 2017



University at Buffalo

The State University of New York

Closing Remarks



Liesl Folks

Dean, School of Engineering and Applied
Sciences, UB

Summary of NSTI Program Curriculum

1 University Tour	Earthquake lab, Driving simulator lab, etc.
10 Lectures (1 hr each)	Career Opportunities in Transportation
	Highway Transportation
	Freight Transportation
	Social Media and Transportation
	Transportation Simulation
	Driving Simulator
	Navigation System
	Transportation and Logistics
	Basswood Bridge Design
	Transportation Practice in NY State
4 Projects (3-5 hr each)	Intersection Design and Signal Optimization
	Network Design for Air
	Basswood Bridge Design
	Transportation and Logistics
3 Field trips (3-4 hr each), 5 hosts	The Railroad Museum
	Traffic operation center at Niagara International Transportation Technology Coalition (NITTEC)
	Erie canal cruise at Lockport
	Air Control Tower
	Field Tour of Buffalo Niagara International Airport
3 Enhancement activities (1-2 hr each)	Team Building
	College Preparation and Admission Process
	PowerPoint Presentation Preparation
"Quizzes"	small questions for daily lectures

Earthquake Lab Tour (Mon)



Driving Simulator Lab Tour

Kevin Hulme

Senior Research Associate

Shared Instrumentation Laboratories

- (1) Why we need a driving simulator?
- (2) What studies we can perform with driving simulator?
- (3) How to make a 360 degree driving simulator?



Academic: Lectures

- Career Opportunities in Transportation

Athena Hutchins

Executive Director

Niagara International

Transportation Technology

Coalition (NITTEC)



- Discuss various opportunities within the transportation career, including government, industry and academia.
- How to become an engineer?
- What is Professional Engineer (PE)?



Academic: Lectures

- Introduction to Freight Transportation

Qian Wang

Assistant Professor

Civil, Structural and Environmental
Engineering, UB

- Understand the existing freight transportation system.
- Learn how to analyze freight cost in NYC



Academic: Lectures

- Transportation Simulation (Thu)

Mike Davis

Senior Transportation Analyst

Greater Buffalo Niagara Regional Transportation Council (GBNRTC)

- (1) Basics of traffic modeling and simulation.
- (2) Practical intersection designs and simulation.
- (3) Solve traffic congestions with simulations.



Academic: Lectures

- Transportation Practice in NY State

Darrel Kaminski

Former Regional Director

NYS Department of Transportation - Region 5



- Introduce mission, current transportation practice and future development of NYS Department of Transportation
- Lots of project pictures in incident management, winter operations, etc.



Academic: Project

- Project: Basswood Bridge Build

Kieran Jordon and Faeze Ghofrani

- Design
- Build sides
- Build entire bridge
- It took three days to finish the project.
Mon- design and build, Tue-Wed- build,
Friday- Test



Basswood Bridge Build – Day 2 and Day 3



Basswood Bridge Test – Day 5

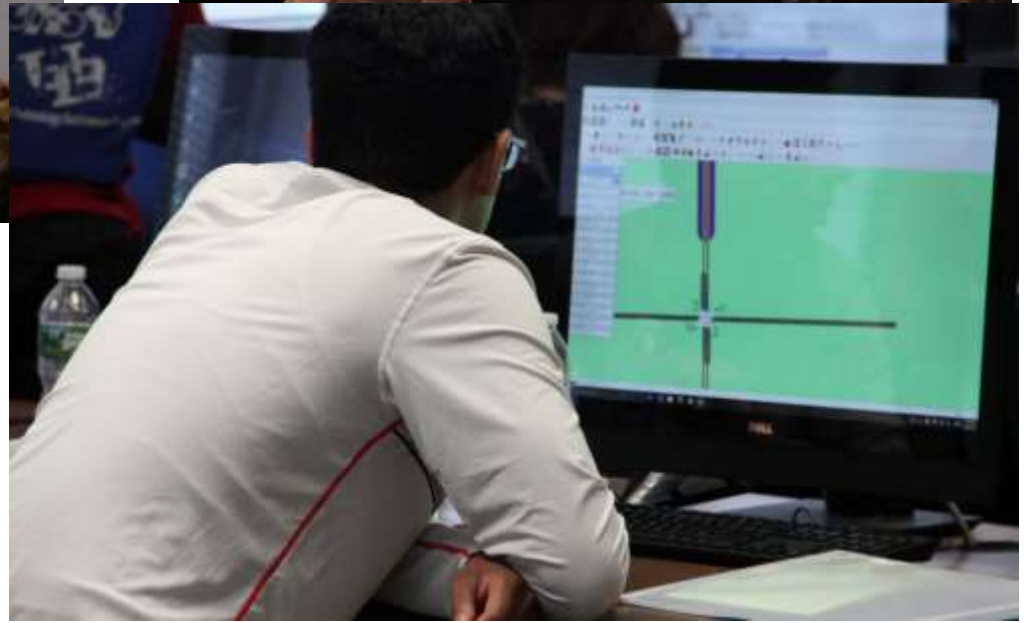
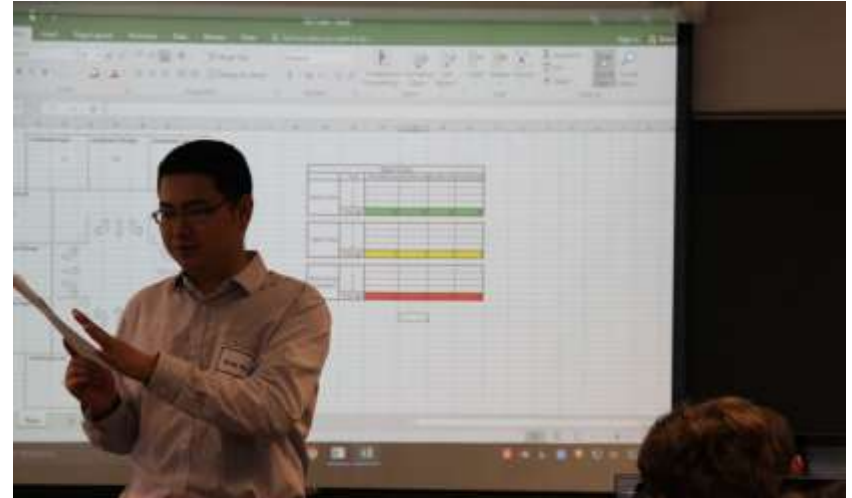


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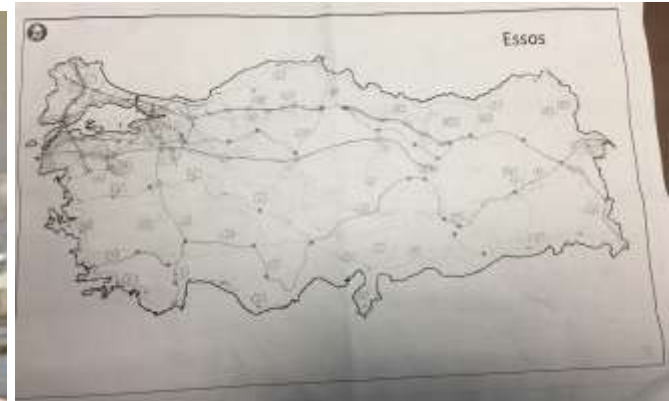
Academic Projects

- Intersection Design and Signal Optimization (Tue)



Academic Project

- Transportation and Logistics (Wed)



Academic Project

- Airline Network Design (Thu)



Field Trips

- Trip 1: Land transportation (Tue):
 - 1.1 The Railroad Museum



Field Trips

- Trip 1: Land transportation (Tue):
 - 1.2. Traffic operation center at Niagara International Transportation Technology Coalition (NITTEC)



Field Trips

- Trip 3: Air transportation (Wed)
 - Air Control Tower



Field Trips • Trip 3: Air transportation (Wed)

- Buffalo Niagara Airport Tour



Field Trips

- Trip 2: Water transportation (Thu):
 - Erie canal at Lockport
 - “Locking through” and being raised the 49 ft. elevation



Enhancement Activities

- Team Building (Mon)



Enhancement Activities

- College Preparation and Admission Process (Fri)

Cleveland James
Senior Associate
Director of Admissions
UB

- College Preparation for each grade



Enhancement Activities

- PowerPoint Presentation Preparation (Fri)



Daily “Quizzes”

1. How much does it cost to run a shake table per day?
2. What does P.E stand for? And why is it important?
3. If you are included in a car accident and your car is not seriously damaged, what should you do first?
4. What kind of left turn movement allows traffic to move without waiting for opposing traffic?
5. What are the main two types of air navigation systems for the airplanes?
6. How much fuel does an average cargo airplane (as what we saw today) require?
7. Where the black box is usually located in the airplane?
8. What is the largest Fedex airport?
9. What kind of traffic simulation model produces the highest level of detail such that you can see each car turning at an intersection?
10. What is the main idea behind google maps?



Student Presentation

Presentation Order	Team	Name	Grade	School
1	Flying Scotsman	Abigale Low	11	City Honors School
2		Savannah Sales	10	Sweethome HS
3		Mykal Charter	10	Saints Tabernacle School of Excellence
4		Alex Kubinieć	11	Cardinal Ohara
5		Keanu Menezes	12	Our Lady of Lourdes
6	The Mayflower	Elisabet Abdissa	11	Nardin Academy
7		Jordan Richheimer	11	Williamsville East High School
8		Malcolm Orrange	9	City Honors at Fosdick Masten Park
9		Brendan Farrell	10	Old Mill High School
10		Kevin Kong	12	Clarence High School
11	The Wright Flyer	Hanna Abdissa	11	Nardin Academy
12		Prince charter	9	Saints Tabernacle School of Excellence
13		Griffin Ertel	11	East Aurora High School
14		Anthony Abraham	12	Williamsville North High School
15		Todd Nelson	10	Sweethome HS
16	Model T	Paige Kelso	9	Depew High School
17		Jordyn Waller	11	Sweet Home High School
18		Michael Clough	12	Williamsville East High School
19		Brenden Resnick	10	The Wheatley School
		Anthony Cruz	10	Nichols



Group Competition in NSTI

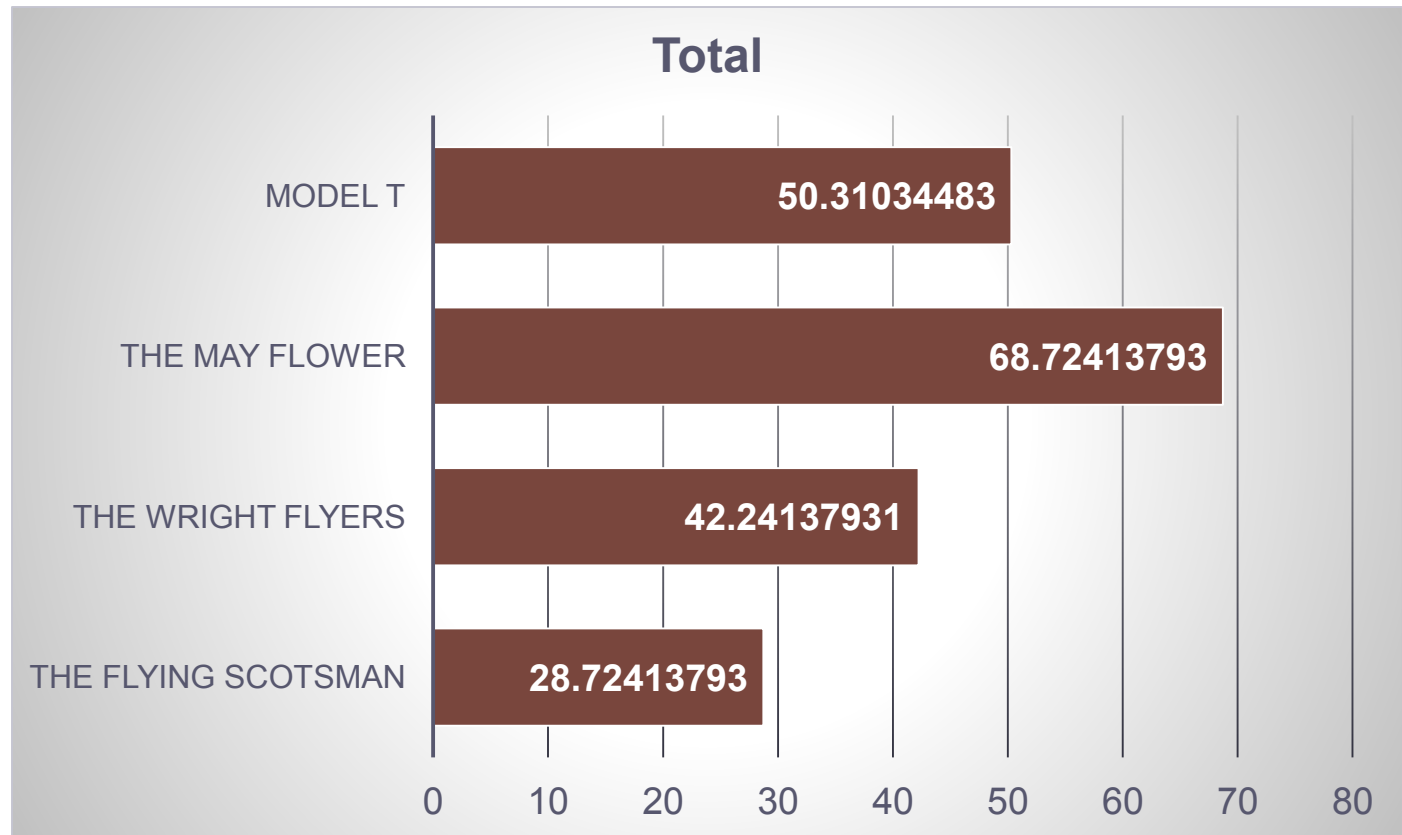
- Competition (weights)
 - Project: Basswood Bridge Design (5)
 - Project: Intersection Design and Signal Optimization (4)
 - Project: Shortest Path (3)
 - Project: Air Network Design (3)
 - Quizzes questions (1)



The Winner Team is ...

- Team “The May Flower”

Elisabet Abdissa
Jordan Richheimer
Malcolm Orrange
Brendan Farrell
Kevin Kong



Thanks to Our Staff: Faeze and Kieran!




















Hasta Luego!

Need your help in future survey and camp reference!



Field : Subject :

Methodology

World Rank	Institution*	Country	Total Score	Score on PUB <input type="text" value="PUB"/>
1	Tongji University		313.1	100
2	Lehigh University		252.1	39.7
3	Swiss Federal Institute of Technology Zurich		250.9	63.9
4	The University of Texas at Austin		248.8	66.2
5	Polytechnic University of Madrid		226.9	59.4
6	Tsinghua University		226.1	85.8
7	National Technical University of Athens		217.2	54.7
8	University of California, Berkeley		213.7	72.6
8	University of Illinois at Urbana-Champaign		213.7	67.9
10	University of Canterbury		204.2	36.4
11	The University of New South Wales		202.4	59.2
12	Western University		201.9	42
13	University of California, San Diego		197.3	39.6
14	Nanyang Technological University		192.8	56.4
15	University of California, Davis		189.9	56.1
16	University at Buffalo, the State University of New York		185.3	40.3
17	The University of Tokyo		183.9	47.1
18	Texas A&M University		183.7	77.8



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