

# BigDataX @ IIT/UChicago

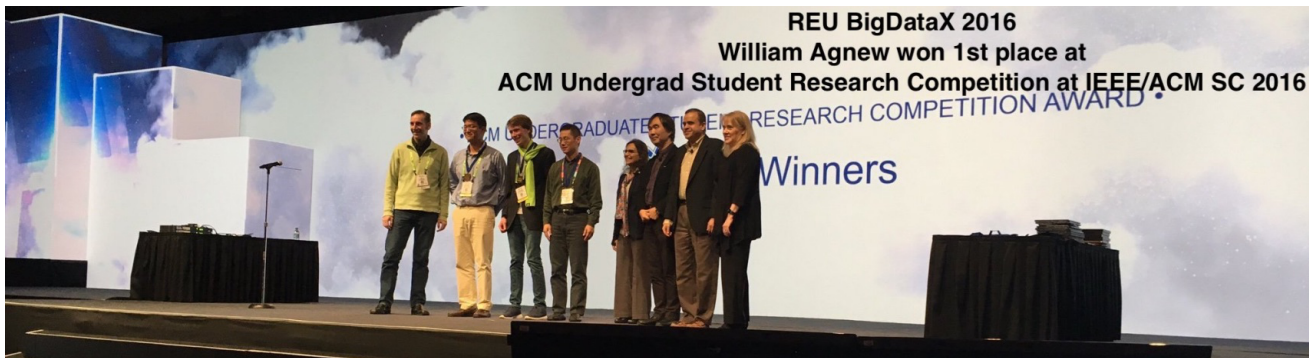
## Summer 2021

<http://datasys.cs.iit.edu/grants/BigDataX/2021/>

The primary objective of the Research Experiences for Undergraduates (REU) site named BigDataX is to promote a data-centric view of scientific and technical computing, at the intersection of distributed systems theory and practice. This award aims to have four mentors at the Illinois Institute of Technology and University of Chicago, with a variety of complementing expertise from theory to programming languages to distributed systems. This work includes a comprehensive educational plan integrating eight undergraduate students with senior PhD students with incremental manageable goals, aimed at allowing undergraduate students to achieve publishable results within the ten-week summer program. The group will maintain a public social network presence through a LinkedIn group at <https://www.linkedin.com/groups/8301753>. For any questions, please send email to [bigdatax-group@iit.edu](mailto:bigdatax-group@iit.edu).

This is the 6<sup>th</sup> year we are running this summer program. Here are some pictures from the prior programs:





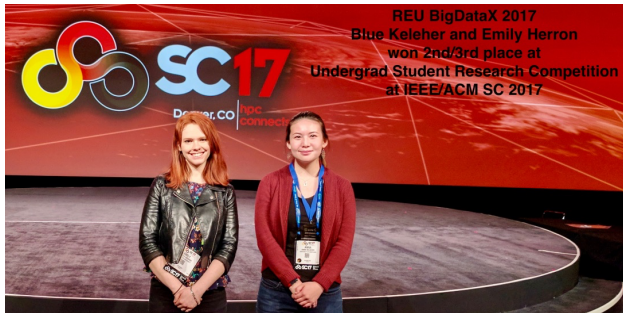
**REU BigDataX 2016**  
**William Agnew won 1st place at**  
**ACM Undergrad Student Research Competition at IEEE/ACM SC 2016**



**REU BigDataX 2017 — Picnic Social Activity**



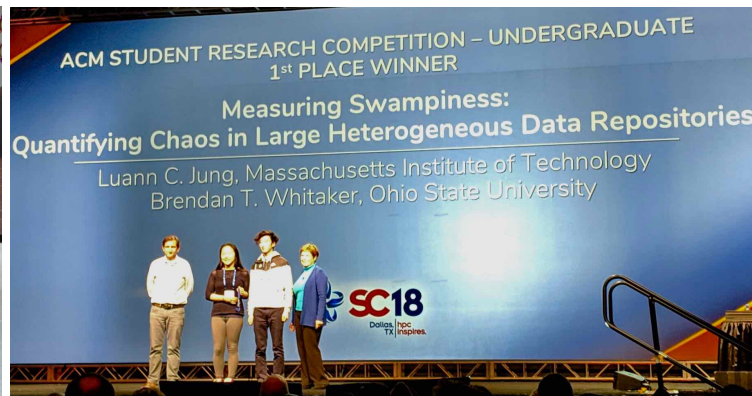
**REU BigDataX 2017**  
**ACM ICS 2017**



**REU BigDataX 2017**  
**Blue Keleher and Emily Herron**  
**won 2nd/3rd place at**  
**Undergrad Student Research Competition**  
**at IEEE/ACM SC 2017**

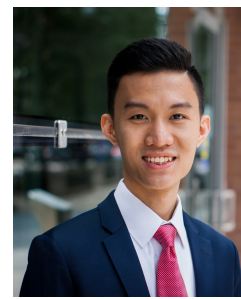
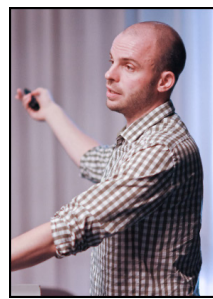


**REU BigDataX+MEDIX Picnic**  
**Summer 2018**



**Mentors (pictured below in the order shown):**

- Faculty
  - Ioan Raicu (IIT) – [iraicu@iit.edu](mailto:iraicu@iit.edu)
  - Kyle Hale (IIT) – [khale1@iit.edu](mailto:khale1@iit.edu)
  - Kyle Chard (UChicago) – [chard@uchicago.edu](mailto:chard@uchicago.edu)
  - Aaron Elmore (UChicago) – [aelmore@cs.uchicago.edu](mailto:aelmore@cs.uchicago.edu)
- Graduate Students
  - Lan Nguyen (IIT) – [lnguyen18@hawk.iit.edu](mailto:lnguyen18@hawk.iit.edu)



**Logistics:**

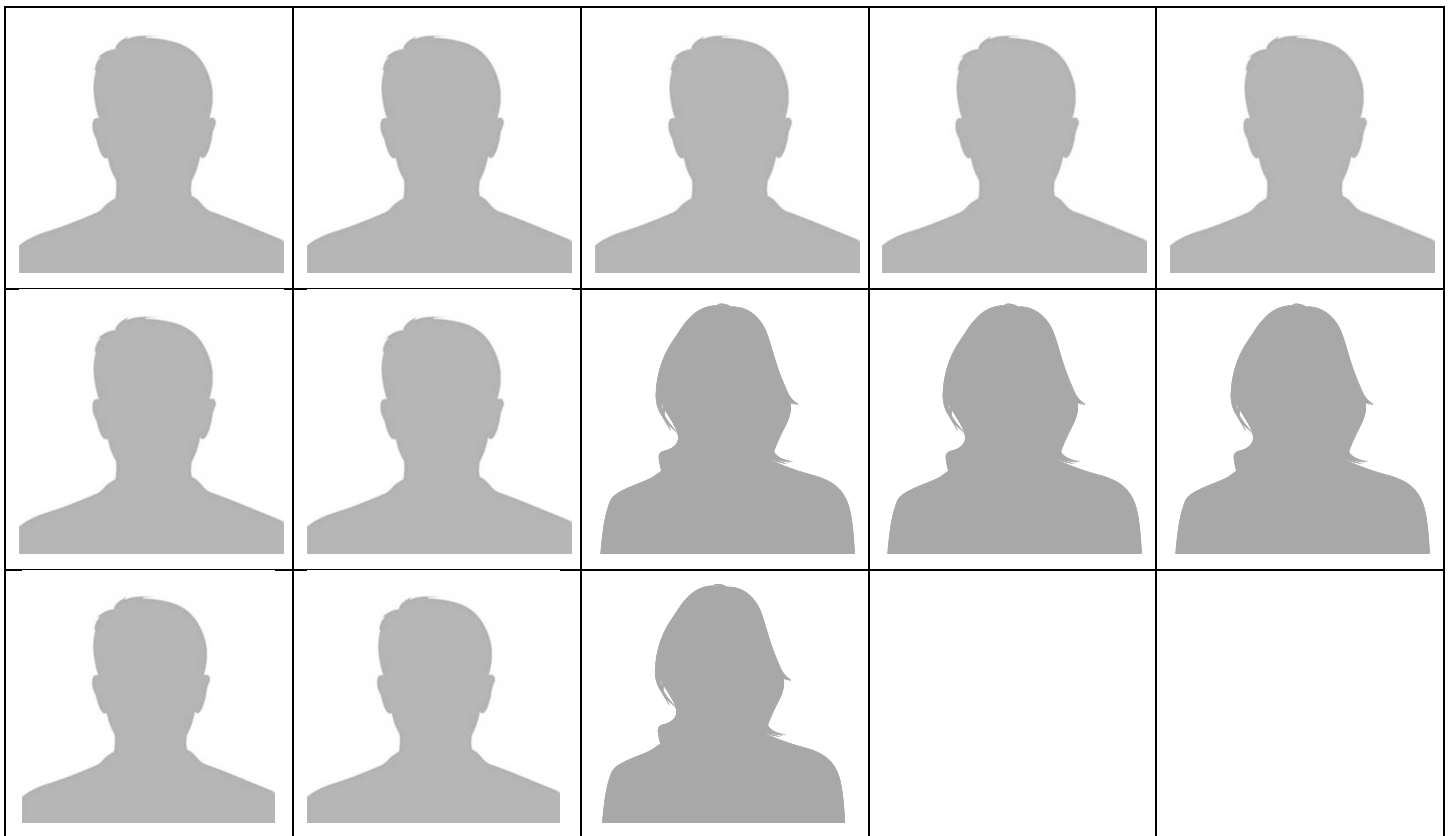
Typical work schedule is considered Monday through Friday (except Holidays) from 8:15am to 5:00pm with 45-minute lunches. The expectation is that students work 40 hours a week, except when there are holidays. There are two holidays Memorial Day and Independence Day, when students have the following day off: Monday 05/31/2021 and Monday 07/05/2021. The first day of the program is Monday 05/24/2021 starting at 9am CST and the last day of the program is Friday 07/30/2021 ending at 5pm CST. The entire program will be virtual.

**BigDataX Students (pictured below in the alphabetical order shown):**

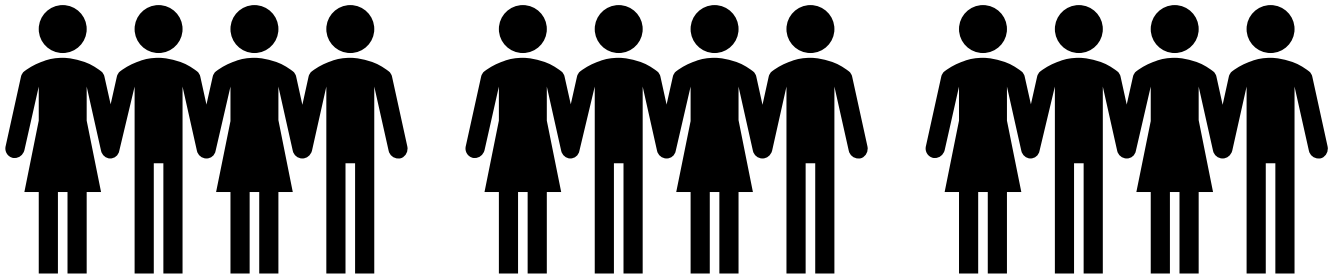
- \* Shreya Bhatta (University of Texas at Arlington — Computer Science)
- \* Matthew Chen (University of Illinois at Urbana Champaign — Computer Science + Statistics)
- \* Kevin Gao (University of California, Berkeley — Computer Science, Data Science)
- \* Anthony Garcia (Indiana University Northwest – Gary — Computer Science)
- \* Aadiba Haque (New York University — Computer Science)
- \* Frederick Huang (University of Maryland - College Park — Computer Science)
- \* Akhil Kodumuri (University of Illinois Urbana-Champaign — Computer Engineering)
- \* Jamie Loring (North Carolina State University, Raleigh — Mathematics, Statistics)
- \* Alexandra Suarez (Southern Illinois University -- Computer Science)
- \* Fahim Tran (Georgia State University — Computer Science)

**Mystic Students (pictured below in the alphabetical order shown):**

- \* Mahad Haider (Illinois Institute of Technology - Computer Science, Bioinformatics)
- \* Karl Hallsby (Illinois Institute of Technology - Computer Engineering)
- \* Tiffany Wong (Illinois Institute of Technology - Computer Science, Mathematics)



The entire group on the first day of the program May 24<sup>th</sup>, 2021.



**Projects, Students, and Mentor Assignments (to be completed by Friday May 28<sup>th</sup>, 2021):**

- TBA

# Schedule

## Week 1

### May 24<sup>th</sup>, 2021

- 9:00am: Welcome & Introductions [everyone]
- 10:00am: Summer schedule overview [Ioan Raicu]
- 10:30am: Social activities brainstorming [Lan Nguyen]
- 11:00am: HR/Q&A [Ioan Raicu]
- 12:00pm: Lunch break
- 1:00pm: Compute/storage resource overview (Chameleon, Mystic) [Ioan Raicu]
- 2:00pm: Linux Tutorial [Lan Nguyen]
- 3:30pm: Tools Tutorial [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### May 25<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 9:00am: What is Research [Ioan Raicu]
- 10:00am: Project Brainstorming [Aaron Elmore]
- 12:00pm: Lunch break
- 12:45am: Individual Reading
- 1:45pm: Project Brainstorming [Kyle Hale]
- 3:45pm: Individual Reading
- 4:45pm: Afternoon briefing [Lan Nguyen]

### May 26<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 9:00am: How to Read a Research Paper [Ioan Raicu]
- 10:00am: Project Brainstorming [Ioan Raicu]
- 12:00pm: Lunch break
- 12:45pm: Individual Reading
- 2:00pm: Project Brainstorming [Kyle Chard]
- 4:00pm: Individual Reading
- 4:45pm: Afternoon briefing [Lan Nguyen]

### May 27<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 8:45am: Individual Reading
- 10:00am: Chameleon Tutorial [Lan Nguyen]
- 12:00pm: Lunch break
- 1:00pm: Mystic Tutorial [Alex Orhean]
- 2:00pm: Individual Reading
- 4:45pm: Afternoon briefing [Lan Nguyen]

### May 28<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 8:45am: Individual Reading
- 12:00pm: Lunch break
- 1:00pm: Pictures [everyone]
- 1:15pm: Project Q&A [everyone]
- 2:15pm: Projects questionnaire
- 2:45pm: Meeting to make project assignments [mentors]
- 3:45pm: Project assignments given out; project brainstorming with mentors in breakout rooms
- 4:45pm: Afternoon briefing [Lan Nguyen]
- 6:30pm: Social Activity [Lan Nguyen]

## Week 2

**May 31<sup>st</sup>, 2021**

HOLIDAY

**June 1<sup>st</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 2<sup>nd</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

11:00am: Seminar Data-Driven Medicine & Precision Oncology

Eric Lefkofsky, Founder and CEO, Tempus

Olufunmilayo I. Olopade, Professor of Medicine and Human Genetics, University of Chicago

<https://computerscience.uchicago.edu/calendar/event/1245/>

4:45pm: Afternoon briefing [Lan Nguyen]

**June 3<sup>rd</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

9:00am: The Anatomy of a Research Paper [Ioan Raicu]

10:00am: Publications & Peer Review Process [Ioan Raicu]

11:00am: Tutorial on Overleaf [Lan Nguyen]

12:45pm: Lunch break

1:30pm: Group meeting #1 with Lightning Talks [All students and all mentors]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 4<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

6:30pm: Social Activity [Lan Nguyen]

## Week 3

**June 7<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 8<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 9<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 10<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

4:45pm: Afternoon briefing [Lan Nguyen]

**June 11<sup>th</sup>, 2021**

8:15am: Morning briefing [Lan Nguyen]

10:00am: Applying to Graduate School [Ioan Raicu]

4:45pm: Afternoon briefing [Lan Nguyen]

6:30pm: Social Activity [Lan Nguyen]

## Week 4

### June 14<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: Group meeting #2 with Lightning Talks [All students and all mentors]
- 3:00pm: Research Careers in Computer Science [Ioan Raicu]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 15<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 16<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 17<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 18<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]
- 6:30pm: Social Activity [Lan Nguyen]



## Week 5

### June 21<sup>st</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
Mid-Term Presentations [All students and mentors] (9:00am – 3:00pm)  
9:00am: Opening Remarks  
9:10am: Student #1  
9:30am: Student #2  
9:50am: Student #3  
10:10am: Break  
10:20am: Student #4  
10:40am: Student #5  
11:00am: Student #6  
11:20am: Student #7  
11:40am: Lunch Break  
12:30pm: Student #8  
12:50pm: Student #9  
1:10pm: Student #10  
1:30pm: Break  
1:40pm: Mystic Student #1  
2:10pm: Mystic Student #2  
2:30pm: Mystic Student #3  
2:50pm: Closing Remarks  
4:45pm: Afternoon briefing [Lan Nguyen]

### June 22<sup>nd</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

### June 23<sup>rd</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

### June 24<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

### June 25<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

## Week 6

### June 28<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: Group meeting #3 with Lightning Talks [All students and all mentors]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 29<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### June 30<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 1<sup>st</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 2<sup>nd</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]
- 6:30pm: Social Activity [Lan Nguyen]

## Week 7

### July 5<sup>th</sup>, 2021

HOLIDAY

### July 6<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 7<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 8<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 9<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: How to write a good extended abstract and poster (for SC21) [All students]
- 3:00pm: "A day in the life of a PhD student" Panel – Joint with DePaul/UChicago MEDIX REU Site
- 5:00pm: NO Afternoon briefing – 3pm panel likely will end after 5pm
- 6:30pm: Social Activity [Lan Nguyen]

### July 10<sup>th</sup>, 2021 (Saturday@Gillson Park – in person for those who are close enough to travel, and feel safe doing so)

- 3pm – 9pm: Summer Picnic [BigDataX/DataSys/MEDIX students/mentors]

## Week 8

### July 12<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: Group meeting #4 with Lightning Talks [All students and all mentors]
- 3:00pm: Competitions in Computing [Ioan Raicu]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 13<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 14<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 15<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 16<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]
- 6:30pm: Social Activity [Lan Nguyen]

## Week 9

### July 19<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: Group meeting #5 with Lightning Talks [All students and all mentors]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 20<sup>th</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 21<sup>st</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 22<sup>nd</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 4:45pm: Afternoon briefing [Lan Nguyen]

### July 23<sup>rd</sup>, 2021

- 8:15am: Morning briefing [Lan Nguyen]
- 1:30pm: SC21 Poster Review [All students]
- 3:30pm: "Women in Science and Technology" Panel in collaboration DePaul [All students]
- 5:00pm: NO Afternoon briefing – 3:30pm panel likely will end after 5pm
- 6:30pm: Social Activity [Lan Nguyen]

## Week 10

### July 26<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
Final Presentations [All students and mentors] (9:00am – 5:00pm)  
9:00am: Opening Remarks  
9:10am: Student #1  
9:40am: Student #2  
10:10am: Student #3  
10:40am: Break  
10:50am: Student #4  
11:20am: Student #5  
11:50am: Student #6  
12:20pm: Lunch Break  
1:00pm: Student #7  
1:30pm: Student #8  
2:00pm: Student #9  
2:30pm: Student #10  
3:00pm: Break  
3:10pm: Mystic Student #1  
3:40pm: Mystic Student #2  
4:10pm: Mystic Student #3  
4:40pm: Closing Remarks  
4:45pm: Afternoon briefing [Lan Nguyen]

### July 27<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
SC21 Posters due to mentors  
4:45pm: Afternoon briefing [Lan Nguyen]

### July 28<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

### July 29<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
4:45pm: Afternoon briefing [Lan Nguyen]

### July 30<sup>th</sup>, 2021

8:15am: Morning briefing [Lan Nguyen]  
Final Materials (report, slides, SC21 poster/paper, code) submitted to mentors  
Exit Survey  
SC21 Posters submitted to <https://submissions.supercomputing.org>  
4:00pm: Afternoon briefing [everyone]

### Post-Program Items

Return laptop/desktop to IIT