



MathQuantum

2025 High School Fellowship



SCHEDULE



As of 07/19/25 - All times in Washington, DC time (ET)

All meetings at [this Zoom room]

Seminar/Talk | Discussion | Lecture
 Hands-on | Workshop | Fun/Interactive

Day 1 - Monday July 14th

	Time (duration)	Session	Speaker
	11am (30min)	Intro to program	Daniel Serrano
	11:30am (30min)	Quantum information science overview	Daniel Serrano
	Noon (1h)	Break	
	1pm (1h)	Fellow introductions	Daniel Serrano
	2pm (1h)	Foundations of quantum thinking	Krish Butani
	3pm (10min)	Break	
	3:10pm (50min)	Intro to python and quantum basics	Krish Butani

Day 2 - Tuesday July 15th

	Time (duration)	Session	Speaker
	11am (1h)	Mathematics of qubits Part I	Krish Butani
	Noon (1h)	Break	
	1pm (45min)	Quantum in pop culture: Ant-Man movies	Spiros Michalakis
	1:45pm (15min)	Break	
	2pm (1h)	Qubits hands-on Part I	Krish Butani

Day 3 - Wednesday July 16th

	Time (duration)	Session	Speaker
	11am (1h)	Mathematics of qubits Part II	Krish Butani
	Noon (1h)	Break	
	1pm (45min)	Qubits hands-on Part II	Krish Butani
	1:45pm (15min)	Break	
	2pm (1.5h)	Creating webpages on github	Daniel Serrano

Day 4 - Thursday July 17th

	Time (duration)	Session	Speaker
	11am (1h)	Building the Bloch sphere	Esteban Ayala
	Noon (1h)	Break	
	1pm (1h)	Playing with the Bloch sphere	Daniel Serrano

Day 5 - Friday July 18th

	Time (duration)	Session	Speaker
	11am (1h)	Quantum gates and circuits	Krish Butani
	Noon (1h)	Break	
	1pm (1h)	Quantum gates hands-on	Krish Butani
	2pm (15min)	Break	
	2:15pm (1h)	Playing quantum games	Daniel Serrano

Day 6 - Monday July 21st

	Time (duration)	Session	Speaker
	11am (1h)	Quantum entanglement: spooky action and beyond	Krish Butani
	Noon (1h)	Break	
	1pm (1h)	Quantum entanglement hands-on	Krish Butani

Day 7 - Tuesday July 22nd

	Time (duration)	Session	Speaker
	11am (1h)	Quantum channels and error correction	Dheeran Wiggins
	Noon (1h)	Break	
	1pm (1h)	Understanding quantum with analogies	Daniel Serrano

Day 8 - Wednesday July 23rd

	Time (duration)	Session	Speaker
	11am (1h)	Quantum technology and future impact	Krish Butani
	Noon (1h)	Break	
	1pm (1h)	Quantum and machine learning	Franz Klein
	2pm (10min)	Break	
	2:10pm (1h)	Mini-project working session Part I	Daniel Serrano

Day 9 - Thursday July 24th

	Time (duration)	Session	Speaker
	11am (1h)	Ethics and QIS	Daniel Serrano
	Noon (1h)	Break	
	1pm (1h)	Mini-project working session Part II	Daniel Serrano
	2pm (1h)	Practical quantum computing	Franz Klein
	3pm (10min)	Break	
	3:10pm (1h)	Mini-project working session Part III	Daniel Serrano

Day 10 - Friday July 25th

	Time (duration)	Session	Speaker
	11am (1.5h)	Finding and applying to internships/ <u>fellowships</u>	Daniel Serrano
	12:30pm (1h)	Break	
	1:30pm (1h)	Designing quantum games	Daniel Serrano
	2:30pm (10min)	Break	
	2:40pm (1.5h)	Mini-project presentations	High school fellows