# Frustrated and Disordered Systems July 3 – July 28, 2017 Detailed Schedule All lectures are in Duane Physics Room G130

### Week 1, July 2 – 6, 2018

Sunday, July 1st	
6:30pm – 8:30	Registration mixer with refreshments
	WeatherTech Café in the C4C
	Beer and Wine Will Be Served
Monday, July 2nd	
8:30 – 9:00	Organizers
	Welcome and School Introduction
9:00 - 10:30	E. Knill
	States in Context
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Bollinger
	Trapped-ion Quantum Simulation, Computing and Sensing
12:30 - 13:45	Lunch
14:00 - 15:30	F. Brandao
	Quantum Entanglement
15:30 – 16:30	Participant Introductions
Tuesday, July 3 <sup>rd</sup>	
9:00 – 10:30	E. Knill
	States in Context
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Bollinger
	Trapped-ion Quantum Simulation, Computing and Sensing
12:30 - 13:45	Lunch
14:00 - 15:30	F. Brandao
	Quantum Entanglement

# Frustrated and Disordered Systems July 3 – July 28, 2017 Detailed Schedule All lectures are in Duane Physics Room G130

Wednesday, July 4th	
9:00 - 10:30	M. Christandl
	Many-particle entanglement
10:30 - 11:00	Coffee Break
11:00 - 12:30	F. Brandao
	Quantum Entanglement
12:30 - 13:45	Lunch
14:00 - 15:30	Holiday Break
Thursday, July 5 <sup>th</sup>	
9:00 - 10:30	J. Bollinger
	Trapped-ion Quantum Simulation, Computing and Sensing
10:30 – 11:00	Coffee Break
11:00 – 12:30	M. Christandl
11.00 12.00	Many-particle entanglement
12:30 – 13:45	Lunch
14:00 – 15:30	M. Troyer
11.00 15.50	Quantum Annealing & Quantum Chemistry
18:30 – 18:55	Poster Talks I
10.00	Duane G130
19:00 – 22:00	Poster Session I
	11th Floor Commons Room
Friday, July 6 <sup>th</sup>	
9:00 - 10:30	M. Troyer
	Quantum Annealing & Quantum Chemistry
10:30 - 11:00	Coffee Break
11:00 - 12:30	M. Christandl
	Many-particle entanglement
12:30 - 13:45	Lunch
14:00 - 15:30	M. Troyer
	Quantum Annealing & Quantum Chemistry
19:00 - 21:30	Catered dinner
	11th Floor Commons Room

## Frustrated and Disordered Systems July 3 – July 28, 2017 Detailed Schedule All lectures are in Duane Physics Room G130

### Week 2, July 9 – 13, 2018

9:00 – 10:30  D. DiVincenzo  Superconducting Quantum computing  10:30 – 11:00  Coffee Break  11:00 – 12:30  B. Terhal  Quantum Error Correction & Quantum Memory	
10:30 – 11:00 Coffee Break 11:00 – 12:30 <b>B. Terhal</b> Quantum Error Correction & Quantum Memory	
11:00 – 12:30 <b>B. Terhal</b> Quantum Error Correction & Quantum Memory	
Quantum Error Correction & Quantum Memory	
•	
10.20 10.45 11.	y
12:30 – 13:45 Lunch	
14:00 – 15:30 <b>R. Renner</b>	
Quantum Foundations	
19:00 – 20:00 Public Lecture: David DiVincenzo	
TBD, Duane Physics G1B30	
Tuesday, July 10 <sup>th</sup>	
9:00 – 10:30 R. Renner	
Quantum Foundations	
10:30 – 11:00	
11:00 – 12:30 <b>B. Terhal</b>	
Quantum Error Correction & Quantum Memory	V
12:30 – 13:45 Lunch	
14:00 – 15:30 <b>D. DiVincenzo</b>	
Superconducting Quantum computing	
18:00 – 20:00 Dessert on Flagstaff Mountain	
Busses leave south of C4C at 6pm	
Wednesday, July 11 <sup>th</sup>	
9:00 – 10:30 R. Renner	
Quantum Foundations	
10:30 – 11:00 Coffee Break	
11:00 – 12:30 <b>B. Terhal</b>	
Quantum Error Correction & Quantum Memory	V
12:30 – 13:45 Lunch	•
14:00 – 15:30	
Ultracold Atoms & Quantum Transducers	

# Frustrated and Disordered Systems July 3 – July 28, 2017 Detailed Schedule All lectures are in Duane Physics Room G130

Thursday, July 12th	
9:00 - 10:30	C. Regal
	Ultracold Atoms & Quantum Transducers
10:30 - 11:00	Coffee Break
11:00 - 12:30	S. Aaronson
	Quantum Algorithms
12:30 - 13:45	Lunch
14:00 - 15:30	D. DiVincenzo
	Superconducting Quantum computing
18:30 - 18:55	Poster Talks II
	Duane G130
19:00 - 22:00	Poster Session II
	11th Floor Commons Room
Friday, July 13th	
9:00 - 10:30	S. Aaronson
	Quantum Algorithms
10:30 - 11:00	Coffee Break
11:00 - 12:30	C. Regal
	Ultracold Atoms & Quantum Transducers
12:30 - 13:45	Lunch
14:00 - 15:30	S. Aaronson
	Quantum Algorithms

#### Frustrated and Disordered Systems July 3 – July 28, 2017

Detailed Schedule All lectures are in Duane Physics Room G130

#### Week 3, July 16 – 20, 2018

Monday, July 16th	
9:00 - 10:30	J. Alicea
	Majorana Quantum Computing
10:30 - 11:00	Coffee Break
11:00 - 12:30	E. Knill
	Statistics in Context
12:30 - 13:45	Lunch
14:00 - 15:30	T. Cubitt
	Quantum Complexity Theory
Tuesday, July 17th	
9:00 - 10:30	J. Alicea
	Majorana Quantum Computing
10:30 - 11:00	Coffee Break
11:00 - 12:30	T. Cubitt
	Quantum Complexity Theory
12:30 - 13:45	Lunch
14:00 - 15:30	D. Gottesman
	Quantum Error Correction & Fault Tolerance
Wednesday, July 18 <sup>th</sup>	
9:00 - 10:30	J. Alicea
	Majorana Quantum Computing
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Martinis
	Experimental Superconducting Quantum Computing
12:30 - 13:45	Lunch
14:00 - 15:30	D. Gottesman
	Quantum Error Correction & Fault Tolerance

## Frustrated and Disordered Systems July 3 – July 28, 2017 Detailed Schedule All lectures are in Duane Physics Room G130

Thursday, July 19th	·
9:00 - 10:30	D. Gottesman
	Quantum Error Correction & Fault Tolerance
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Martinis
	Experimental Superconducting Quantum Computing
12:30 - 13:45	Lunch
14:00 - 15:30	J. Martinis
	Experimental Superconducting Quantum Computing
18:30 - 18:55	Poster Talks III
	Duane G130
19:00 - 22:00	Poster Session III
	11th Floor Commons Room
Friday, July 20th	
9:00 - 10:30	D. Gottesman
	Quantum Error Correction & Fault Tolerance
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Martinis
	Experimental Superconducting Quantum Computing
12:30 - 13:45	Lunch
14:00 - 15:30	T. Cubitt
	Quantum Complexity Theory
19:00 - 21:30	Catered dinner
	11th Floor Commons Room

#### Frustrated and Disordered Systems July 3 – July 28, 2017

Detailed Schedule All lectures are in Duane Physics Room G130

#### Week 4, July 23 - July 27, 2018

Monday, July 23rd	
9:00 – 10:30	F. Verstraete
	Tensor Networks
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Haah
	Topological Phases for Robust Quantum Memory
12:30 - 13:45	Lunch
14:00 - 15:30	J. Ye
	Quantum Metrology with Ultracold Atoms
Tuesday, July 24th	
9:00 - 10:30	F. Verstraete
	Tensor Networks
10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Haah
	Topological Phases for Robust Quantum Memory
12:30 - 13:45	Lunch
14:00 - 15:30	J. Ye
	Quantum Metrology with Ultracold Atoms
Wednesday, July 25 <sup>th</sup>	
9:00 - 10:30	F. Verstraete
	Tensor Networks
10:30 - 11:00	Coffee Break
11:00 - 12:30	B. Swingle
	Quantum Many-body Systems & Quantum Gravity
12:30 - 13:45	Lunch
14:00 - 15:30	J. Ye
	Quantum Metrology with Ultracold Atoms
Th 1 1 1 0.66	
Thursday, July 26 <sup>th</sup>	E Vancture etc
9:00 – 10:30	F. Verstraete
	Tensor Networks

### $Frustrated \ and \ Disordered \ Systems \qquad \hbox{\it July 3-July 28, 2017}$

Detailed Schedule All lectures are in Duane Physics Room G130

10:30 - 11:00	Coffee Break
11:00 - 12:30	J. Haah
	Topological Phases for Robust Quantum Memory
12:30 - 13:45	Lunch
14:00 - 15:30	B. Swingle
	Quantum Many-body Systems & Quantum Gravity

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

9:00 - 10:30	B. Swingle
	Quantum Many-body Systems & Quantum Gravity
10:30 - 11:00	Coffee Break
11:00 - 12:30	Summary of the School
12:30 - 13:45	Lunch